



## NMED AIR QUALITY NSR SIGNIFICANT REVISION APPLICATION

**AerSale, Inc.**  
**AerSale Component Solutions**



**Prepared By:**  
Ben Ayala - Surface Fin. Plating Manager

**AERSALE, INC.**

4901 Rockaway Blvd NE  
Rio Rancho, NM 87124  
(505) 896-2644 ext. 2031

Adam Erenstein – Principal Consultant

**TRINITY CONSULTANTS**

9400 Holly Ave NE  
Building 3, Suite B  
Albuquerque, NM 87122

(505) 266-6611

October 2024

Project 233201.0123

October 17, 2024

Permit Programs Manager  
NMED Air Quality Bureau  
525 Camino de los Marquez Suite 1  
Santa Fe, NM 87505-1816

*RE: NSR Significant Revision Application to NSR Permit No. 8491  
AerSale, Inc. – AerSale Component Solutions*

Permit Programs Managers,

On behalf of AerSale, Inc., Trinity Consultants is submitting this application for an NSR significant revision application for the AerSale Component Solutions facility. The facility is located in Rio Rancho, New Mexico in Sandoval County. The facility repairs and restores airplane component and equipment such as thrust reversers, cargo doors, and flight control surfaces. AerSale, Inc. seeks to add one (1) paint booth (PAINT-3) and two (two) dust collectors associated with abrasive blasting (units DC-1 & DC-2) (exempt pursuant 20.2.72.202.B.7 NMAC). The paint booth will be inside an existing building on site. Finally, the list of paints used in the existing two (2) paint booths (PAINT-1 & PAINT-2) will be updated based on current operations.

The format and content of this application are consistent with the Bureau's current policy regarding NSR applications; it is a complete package using the most current application forms. Enclosed is one hard copy, including the original certification page, and electronic files will be delivered via secure link. Please feel free to contact me at (505) 266-6611 or by email at [AErenstein@trinityconsultants.com](mailto:AErenstein@trinityconsultants.com) if you have any questions regarding this application. Alternatively, you may contact Ben Ayala at 505-896-2644 ext. 2031 or by email at [Ben.Ayala@aersale.com](mailto:Ben.Ayala@aersale.com) if you have any questions regarding this application.

Sincerely,

Adam Erenstein  
Principal Consultant

cc: Ben Ayala (AerSale)  
Trinity Project File: 233201.0123

**TRINITY CONSULTANTS, INC.**12700 PARK CENTRAL DRIVE STE. 600  
DALLAS, TX 75251-1546  
(972) 661-8100JPMorgan Chase Bank, N.A.  
Dallas, Texas

88-88/1113

CHECK DATE

July 26, 2024

Fraud Protected  
by Positive PayPAY  
TO THE  
ORDER  
OF

Five Hundred and 00/100 Dollars

New Mexico Environmental Department

Air Quality Bureau

525 Camino de los Marquez

Suite 1

Santa Fe, NM 87505-1816

AMOUNT 500.00

NOT VALID AFTER 90 DAYS



AUTHORIZED SIGNATURE

Details on back

⑈ 658109 ⑈ ⑆ 111300880 ⑆

9319954724 ⑈

**TRINITY CONSULTANTS, INC.**

Check Date: 7/26/2024

658109

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
7222332010123NSRAF	7/22/2024	0169184	500.00			500.00
New Mexico Environmental Department		TOTAL	500.00			500.00
CHASE BANK-	26	00006134				

658109

28644699001





## Air Permit Application Compliance History Disclosure Form

Pursuant to Subsection 74-2-7(S) of the New Mexico Air Quality Control Act ("AQCA"), NMSA §§ 74-2-1 to -17, the New Mexico Environment Department ("Department") may deny any permit application or revoke any permit issued pursuant to the AQCA if, within ten years immediately preceding the date of submission of the permit application, the applicant met any one of the criteria outlined below. In order for the Department to deem an air permit application administratively complete, or issue an air permit for those permits without an administrative completeness determination process, the applicant must complete this Compliance History Disclosure Form as specified in Subsection 74-2-7(P). An existing permit holder (permit issued prior to June 18, 2021) shall provide this Compliance History Disclosure Form to the Department upon request.

Permittee/Applicant Company Name		Expected Application Submittal Date
AerSale Inc.		October 17, 2024
Permittee/Company Contact	Phone	Email
Ben Ayala	(505) 896-2644	<a href="mailto:Ben.Ayala@aersale.com">Ben.Ayala@aersale.com</a>
<b>Within the 10 years preceding the expected date of submittal of the application, has the permittee or applicant:</b>		
1	Knowingly misrepresented a material fact in an application for a permit?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2	Refused to disclose information required by the provisions of the New Mexico Air Quality Control Act?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3	Been convicted of a felony related to environmental crime in any court of any state or the United States?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4	Been convicted of a crime defined by state or federal statute as involving or being in restraint of trade, price fixing, bribery, or fraud in any court of any state or the United States?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5a	Constructed or operated any facility for which a permit was sought, including the current facility, without the required air quality permit(s) under 20.2.70 NMAC, 20.2.72 NMAC, 20.2.74 NMAC, 20.2.79 NMAC, or 20.2.84 NMAC?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5b	<p>If "No" to question 5a, go to question 6.</p> <p>If "Yes" to question 5a, state whether each facility that was constructed or operated without the required air quality permit met at least one of the following exceptions:</p> <p>a. The unpermitted facility was discovered after acquisition during a timely environmental audit that was authorized by the Department; or</p> <p>b. The operator of the facility estimated that the facility's emissions would not require an air permit, <b>and</b> the operator applied for an air permit within 30 calendar days of discovering that an air permit was required for the facility.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
6	Had any permit revoked or permanently suspended for cause under the environmental laws of any state or the United States?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
7	For each "yes" answer, please provide an explanation and documentation.	



<b>Mail Application To:</b>  New Mexico Environment Department Air Quality Bureau Permits Section 525 Camino de los Marquez, Suite 1 Santa Fe, New Mexico, 87505  Phone: (505) 476-4300 Fax: (505) 476-4375 <a href="http://www.env.nm.gov/aqb">www.env.nm.gov/aqb</a>		<b>For Department use only:</b>
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## Universal Air Quality Permit Application

### Use this application for NOI, NSR, or Title V sources.

Use this application for: the initial application, modifications, technical revisions, and renewals. For technical revisions, complete Sections, 1-A, 1-B, 2-E, 3, 9 and any other sections that are relevant to the requested action; coordination with the Air Quality Bureau permit staff prior to submittal is encouraged to clarify submittal requirements and to determine if more or less than these sections of the application are needed. Use this application for streamline permits as well.

**This application is submitted as** (check all that apply): ☐ Request for a No Permit Required Determination (no fee)  
☐ **Updating** an application currently under NMED review. Include this page and all pages that are being updated (no fee required).  
**Construction Status:** ☐ Not Constructed ☒ Existing Permitted (or NOI) Facility ☐ Existing Non-permitted (or NOI) Facility  
**Minor Source:** ☐ NOI 20.2.73 NMAC ☒ 20.2.72 NMAC application or revision ☐ 20.2.72.300 NMAC Streamline application  
**Title V Source:** ☐ Title V (new) ☐ Title V renewal ☐ TV minor mod. ☐ TV significant mod. ☐ TV Acid Rain: ☐ New ☐ Renewal  
**PSD Major Source:** ☐ PSD major source (new) ☐ Minor Modification to a PSD source ☐ a PSD major modification

#### Acknowledgements:

- ☒ I acknowledge that a pre-application meeting is available to me upon request. ☐ Title V Operating, Title IV Acid Rain, and NPR applications have no fees.
- ☒ \$500 NSR application Filing Fee enclosed OR ☐ The full permit fee associated with 10 fee points (required w/ streamline applications).
- ☒ Check No.: 658109 in the amount of \$500.
- ☒ I acknowledge the required submittal format for the hard copy application is printed double sided 'head-to-toe', 2-hole punched (except the Sect. 2 landscape tables is printed 'head-to-head'), numbered tab separators. Incl. a copy of the check on a separate page.
- ☒ I acknowledge there is an annual fee for permits in addition to the permit review fee: [www.env.nm.gov/air-quality/permit-fees-2/](http://www.env.nm.gov/air-quality/permit-fees-2/).
- ☐ This facility qualifies for the small business fee reduction per 20.2.75.11.C. NMAC. The full \$500.00 filing fee is included with this application and I understand the fee reduction will be calculated in the balance due invoice. The Small Business Certification Form has been previously submitted or is included with this application. (Small Business Environmental Assistance Program Information: [www.env.nm.gov/air-quality/small-biz-eap-2/](http://www.env.nm.gov/air-quality/small-biz-eap-2/).)

**Citation:** Please provide the **low level citation** under which this application is being submitted: **20.2.72.200.A.(1) NMAC** (e.g. application for a new minor source would be 20.2.72.200.A NMAC, one example for a Technical Permit Revision is 20.2.72.219.B.1.b NMAC, a Title V acid rain application would be: 20.2.70.200.C NMAC)

## Section 1 – Facility Information

Section 1-A: Company Information		AI # if known: 35043	Updating Permit/NOI #: 8491
1	Facility Name: AerSale Component Solutions	Plant primary SIC Code (4 digits): 4581	
		Plant NAIC code (6 digits): 488190	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): 4901 Rockaway Blvd NE, Rio Rancho, NM 87124		
2	Plant Operator Company Name: AerSale Component Solutions	Phone/Fax: (505) 896-2644	
a	Plant Operator Address: 4901 Rockaway Blvd NE, Rio Rancho, NM 87124		

b	Plant Operator's New Mexico Corporate ID or Tax ID: 20-1616700	
3	Plant Owner(s) name(s): AerSale, Inc.	Phone/Fax: (305) 764-3200
a	Plant Owner(s) Mailing Address(s): 121 Alhambra Plaza Suite 1700, Coral Gables, FL 33134	
4	Bill To (Company): AerSale Component Solutions	Phone/Fax: (505) 896-2644
a	Mailing Address: 4901 Rockaway Blvd NE, Rio Rancho, NM 87124	E-mail: <a href="mailto:Jeremy.Tulipane@aersale.com">Jeremy.Tulipane@aersale.com</a>
5	<input checked="" type="checkbox"/> Preparer: Trinity Consultants <input checked="" type="checkbox"/> Consultant: Adam Erenstein	Phone/Fax: (505) 266-6611
a	Mailing Address: 9400 Holly Ave, Bldg. 3, Ste. B, Albuquerque, NM 87122	E-mail: <a href="mailto:AErenstein@trinityconsultants.com">AErenstein@trinityconsultants.com</a>
6	Plant Operator Contact: Jeremy Tulipane	Phone/Fax: (505) 896-2644 ext. 2009
a	Address: 4901 Rockaway Blvd Ne, Rio Rancho, NM, 87124	E-mail: <a href="mailto:Jeremy.Tulipane@aersale.com">Jeremy.Tulipane@aersale.com</a>
7	Air Permit Contact: Ben Ayala	Title: Surface Finishing Plating Manager
a	E-mail: <a href="mailto:Ben.Ayala@aersale.com">Ben.Ayala@aersale.com</a>	Phone/Fax: (505) 896-2644 ext. 2031
b	Mailing Address: 4901 Rockaway Blvd Ne, Rio Rancho, NM, 87124	
c	The designated Air permit Contact will receive all official correspondence (i.e. letters, permits) from the Air Quality Bureau.	

### Section 1-B: Current Facility Status

1.a	Has this facility already been constructed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.b If yes to question 1.a, is it currently operating in New Mexico? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	If yes to question 1.a, was the existing facility subject to a Notice of Intent (NOI) (20.2.73 NMAC) before submittal of this application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes to question 1.a, was the existing facility subject to a construction permit (20.2.72 NMAC) before submittal of this application? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
3	Is the facility currently shut down? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, give month and year of shut down (MM/YY): N/A
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the permit No. is: N/A
7	Has this facility been issued a No Permit Required (NPR)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the NPR No. is: N/A
8	Has this facility been issued a Notice of Intent (NOI)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the NOI No. is: N/A
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, the permit No. is: NSR No. 8491
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the register No. is: N/A

### Section 1-C: Facility Input Capacity & Production Rate

1	What is the facility's maximum input capacity, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: N/A	Daily: N/A	Annually: N/A
b	Proposed	Hourly: N/A*	Daily: N/A*	Annually: N/A*
2	What is the facility's maximum production rate, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: N/A	Daily: N/A	Annually: N/A
b	Proposed	Hourly: N/A*	Daily: N/A*	Annually: N/A*

\*The facility repairs and restores airplane component and equipment; therefore, the facility has a variable production rate or input capacity.

## Section 1-D: Facility Location Information

1	Latitude (decimal degrees): 35.261089 N	Longitude (decimal degrees): 106.637042 W	County: Sandoval	Elevation (ft): 5200
2	UTM Zone: <input type="checkbox"/> 12 or <input checked="" type="checkbox"/> 13		Datum: <input type="checkbox"/> NAD 83 <input checked="" type="checkbox"/> WGS 84	
a	UTM E (in meters, to nearest 10 meters): 351,090 m E		UTM N (in meters, to nearest 10 meters): 3,903,230 m N	
3	Name and zip code of nearest New Mexico town: Rio Rancho, 87124			
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From the intersection of Northern Blvd NE and NM-528N in Rio Rancho NM, head southeast on NM-528 N. Continue on NM-528 N for 0.7 miles before taking a right turn onto Rockaway Blvd NE. Follow Rockaway Blvd NE for 0.1 miles and the facility will be on your right hand side.			
5	The facility is located 1.6 miles north-northwest of Corrales, NM.			
6	Land Status of facility (check one): <input checked="" type="checkbox"/> Private <input type="checkbox"/> Indian/Pueblo <input type="checkbox"/> Government <input type="checkbox"/> BLM <input type="checkbox"/> Forest Service <input type="checkbox"/> Military			
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: Municipalities: Rio Rancho, Albuquerque; Indian Tribes: Sandia Pueblo, Santa Ana Pueblo; Counties: Sandoval County, Bernalillo County			
8	<b>20.2.72 NMAC applications only:</b> Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see <a href="http://www.env.nm.gov/air-quality/modeling-publications/">www.env.nm.gov/air-quality/modeling-publications/</a> )? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers: Bernalillo County 5.33 km			
9	Name nearest Class I area: Bandelier Wilderness			
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 54.9 km			
11	Distance (meters) from the perimeter of the Area of Operations (AO is defined as the plant site inclusive of all disturbed lands, including mining overburden removal areas) to nearest residence, school or occupied structure: 40 m			
12	Method(s) used to delineate the Restricted Area: N/A  <b>"Restricted Area"</b> is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.			
13	Does the owner/operator intend to operate this source as a portable stationary source as defined in 20.2.72.7.X NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.			
14	Will this facility operate in conjunction with other air regulated parties on the same property? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, what is the name and permit number (if known) of the other facility?			

## Section 1-E: Proposed Operating Schedule (The 1-E.1 & 1-E.2 operating schedules may become conditions in the permit.)

1	Facility <b>maximum</b> operating ( $\frac{\text{hours}}{\text{day}}$ ): 16	( $\frac{\text{days}}{\text{week}}$ ): 5	( $\frac{\text{weeks}}{\text{year}}$ ): 52	( $\frac{\text{hours}}{\text{year}}$ ): 4160
2	Facility's maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$ )? Start: 5:00		<input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	End: 11:30 <input type="checkbox"/> AM <input checked="" type="checkbox"/> PM
3	Month and year of anticipated start of construction: TBD			
4	Month and year of anticipated construction completion: TBD			
5	Month and year of anticipated startup of new or modified facility: TBD			
6	Will this facility operate at this site for more than one year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

**Section 1-F: Other Facility Information**

1	Are there any current Notice of Violations (NOV), compliance orders, or any other compliance or enforcement issues related to this facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, specify:		
a	If yes, NOV date or description of issue: N/A	NOV Tracking No: N/A	
b	Is this application in response to any issue listed in 1-F, 1 or 1a above? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, provide the 1c & 1d info below:		
c	Document Title: N/A	Date: N/A	Requirement # (or page # and paragraph #): N/A
d	Provide the required text to be inserted in this permit: N/A		
2	Is air quality dispersion modeling or modeling waiver being submitted with this application? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
3	Does this facility require an "Air Toxics" permit under 20.2.72.400 NMAC & 20.2.72.502, Tables A and/or B? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
a	If Yes, what type of source? <input type="checkbox"/> Major ( <input type="checkbox"/> ≥10 tpy of any single HAP OR <input type="checkbox"/> ≥25 tpy of any combination of HAPS) OR <input checked="" type="checkbox"/> Minor ( <input checked="" type="checkbox"/> <10 tpy of any single HAP AND <input checked="" type="checkbox"/> <25 tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
a	If yes, include the name of company providing commercial electric power to the facility: N/A  Commercial power is purchased from a commercial utility company, which specifically does not include power generated on site for the sole purpose of the user.		

**Section 1-G: Streamline Application** (This section applies to 20.2.72.300 NMAC Streamline applications only)

1	<input type="checkbox"/> I have filled out Section 18, "Addendum for Streamline Applications." <input checked="" type="checkbox"/> N/A (This is not a Streamline application.)
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**Section 1-H: Current Title V Information - Required for all applications from TV Sources**

(Title V-source required information for all applications submitted pursuant to 20.2.72 NMAC (Minor Construction Permits), or 20.2.74/20.2.79 NMAC (Major PSD/NNSR applications), and/or 20.2.70 NMAC (Title V))

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC): N/A		Phone: N/A
a	R.O. Title: N/A	R.O. e-mail: N/A	
b	R. O. Address: N/A		
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): N/A		Phone: N/A
a	A. R.O. Title: N/A	A. R.O. e-mail: N/A	
b	A. R. O. Address: N/A		
3	Company's Corporate or Partnership Relationship to any other Air Quality Permittee (List the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship): N/A		
4	Name of Parent Company ("Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.): N/A		
a	Address of Parent Company: N/A		
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.): N/A		
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: N/A		

7	Affected Programs to include Other States, local air pollution control programs (i.e. Bernalillo) and Indian tribes: Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B)? If yes, state which ones and provide the distances in kilometers: N/A
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## Section 1-I – Submittal Requirements

Each 20.2.73 NMAC (**NOI**), a 20.2.70 NMAC (**Title V**), a 20.2.72 NMAC (**NSR** minor source), or 20.2.74 NMAC (**PSD**) application package shall consist of the following:

### Hard Copy Submittal Requirements:

- 1) One hard copy **original signed and notarized application package printed double sided 'head-to-toe' 2-hole punched** as we bind the document on top, not on the side; except Section 2 (landscape tables), which should be **head-to-head**. Please use **numbered tab separators** in the hard copy submittal(s) as this facilitates the review process. For NOI submittals only, hard copies of UA1, Tables 2A, 2D & 2F, Section 3 and the signed Certification Page are required. **Please include a copy of the check on a separate page.**
- 2) If the application is for a minor NSR, PSD, NNSR, or Title V application, include one working hard **copy** for Department use. This **copy** should be printed in book form, 3-hole punched, and **must be double sided**. Note that this is in addition to the head-to-to 2-hole punched copy required in 1) above. Minor NSR Technical Permit revisions (20.2.72.219.B NMAC) only need to fill out Sections 1-A, 1-B, 3, and should fill out those portions of other Section(s) relevant to the technical permit revision. TV Minor Modifications need only fill out Sections 1-A, 1-B, 1-H, 3, and those portions of other Section(s) relevant to the minor modification. NMED may require additional portions of the application to be submitted, as needed.
- 3) The entire NOI or Permit application package, including the full modeling study, should be submitted electronically. Electronic files for applications for NOIs, any type of General Construction Permit (GCP), or technical revisions to NSRs must be submitted with compact disk (CD) or digital versatile disc (DVD). For these permit application submittals, **two CD** copies are required (in sleeves, not crystal cases, please), with additional CD copies as specified below. NOI applications require only a **single CD** submittal. Electronic files for other New Source Review (construction) permits/permit modifications or Title V permits/permit modifications can be submitted on CD/DVD or sent through AQB's secure file transfer service.

### Electronic files sent by (check one):

☐ CD/DVD attached to paper application

☒ Secure electronic transfer. Air Permit Contact Name: Adam Erenstein, Email: [AErenstein@trinityconsultants.com](mailto:AErenstein@trinityconsultants.com), Phone number: (505) 266-6611.

a. If the file transfer service is chosen by the applicant, after receipt of the application, the Bureau will email the applicant with instructions for submitting the electronic files through a secure file transfer service. Submission of the electronic files through the file transfer service needs to be completed within 3 business days after the invitation is received, so the applicant should ensure that the files are ready when sending the hard copy of the application. The applicant will not need a password to complete the transfer. **Do not use the file transfer service for NOIs, any type of GCP, or technical revisions to NSR permits.**

- 4) Optionally, the applicant may submit the files with the application on compact disk (CD) or digital versatile disc (DVD) following the instructions above and the instructions in 5 for applications subject to PSD review.
- 5) If **air dispersion modeling** is required by the application type, include the **NMED Modeling Waiver** and/or electronic air dispersion modeling report, input, and output files. The dispersion modeling **summary report only** should be submitted as hard copy(ies) unless otherwise indicated by the Bureau.
- 6) If the applicant submits the electronic files on CD and the application is subject to PSD review under 20.2.74 NMAC (PSD) or NNSR under 20.2.79 NMC include,
  - a. one additional CD copy for US EPA,
  - b. one additional CD copy for each federal land manager affected (NPS, USFS, FWS, USDI) and,
  - c. one additional CD copy for each affected regulatory agency other than the Air Quality Bureau.

If the application is submitted electronically through the secure file transfer service, these extra CDs do not need to be submitted.

## Electronic Submittal Requirements [in addition to the required hard copy(ies)]:

- 1) All required electronic documents shall be submitted as 2 separate CDs or submitted through the AQB secure file transfer service. Submit a single PDF document of the entire application as submitted and the individual documents comprising the application.
- 2) The documents should also be submitted in Microsoft Office compatible file format (Word, Excel, etc.) allowing us to access the text and formulas in the documents (copy & paste). Any documents that cannot be submitted in a Microsoft Office compatible format shall be saved as a PDF file from within the electronic document that created the file. If you are unable to provide Microsoft office compatible electronic files or internally generated PDF files of files (items that were not created electronically: i.e. brochures, maps, graphics, etc.), submit these items in hard copy format. We must be able to review the formulas and inputs that calculated the emissions.
- 3) It is preferred that this application form be submitted as 4 electronic files (**3 MSWord docs**: Universal Application section 1 [UA1], Universal Application section 3-19 [UA3], and Universal Application 4, the modeling report [UA4]) and **1 Excel file** of the tables (Universal Application section 2 [UA2]). Please include as many of the 3-19 Sections as practical in a single MS Word electronic document. Create separate electronic file(s) if a single file becomes too large or if portions must be saved in a file format other than MS Word.
- 4) The **electronic file names** shall be a maximum of 25 characters long (including spaces, if any). The format of the electronic Universal Application shall be in the format: "A-3423-FacilityName". The "A" distinguishes the file as an application submittal, as opposed to other documents the Department itself puts into the database. Thus, all electronic application submittals should begin with "A-". Modifications to existing facilities should use the **core permit number** (i.e. '3423') the Department assigned to the facility as the next 4 digits. Use 'XXXX' for new facility applications. The format of any separate electronic submittals (additional submittals such as non-Word attachments, re-submittals, application updates) and Section document shall be in the format: "A-3423-9-description", where "9" stands for the **section #** (in this case Section 9-Public Notice). Please refrain, as much as possible, from submitting any scanned documents as this file format is extremely large, which uses up too much storage capacity in our database. Please take the time to fill out the **header information** throughout all submittals as this will identify any loose pages, including the Application Date (date submitted) & Revision number (0 for original, 1, 2, etc.; which will help keep track of subsequent partial update(s) to the original submittal. Do not use special symbols (#, @, etc.) in file names. The footer information should not be modified by the applicant.

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**Table 2-A: Regulated Emission Sources**

Unit and stack numbering must correspond throughout the application package. If applying for a NOI under 20.2.73 NMAC, equipment exemptions under 2.72.202 NMAC do not apply.

Unit Number <sup>1</sup>	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity <sup>3</sup> (Specify Units)	Requested Permitted Capacity <sup>3</sup> (Specify Units)	Date of Manufacture <sup>2</sup>	Controlled by Unit #	Source Classi- fication Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) <sup>4</sup>	Replacing Unit No.
							Date of Construction/ Reconstruction <sup>2</sup>	Emissions vented to Stack #				
PAINT-1	Paint Booth	Industrial Side Downdraft Paint Booth	SDD-1000	Unknown	15,600 CFM	15,600 CFM	Unknown	FILTER-1	40200101	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							Unknown	Bldg-D1 & Bldg-D2				
PAINT-2	Paint Booth	Industrial Side Downdraft Paint Booth	SDD-1000	Unknown	15,600 CFM	15,600 CFM	Unknown	FILTER-2	40200101	<input type="checkbox"/> Existing (unchanged) <input checked="" type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							Unknown	Bldg-E1 & Bldg-E2				
PAINT-3	Paint Booth	Industrial Side Downdraft Paint Booth	SDD-1000	Unknown	2,800 CFM	2,800 CFM	TBD	FILTER-3	40200101	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input checked="" type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							TBD	Bldg-D3				
Tank-22	Chromium Tank Emissions	Ronatec	TBD	TBD	196 gal	196 gal	2019	N/A	30901016	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	Bldg-B				
FUG-22	Chromium Tank Fugitives	TBD	TBD	TBD	196 gal	196 gal	TBD	N/A	30901016	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							TBD	N/A				
Tank-27	Chromium Tank Emissions	Ronatec	TBD	TBD	196 gal	196 gal	2019	N/A	30901016	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	Bldg-B				
FUG-27	Chromium Tank Fugitives	TBD	TBD	TBD	196 gal	196 gal	TBD	N/A	30901016	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							TBD	N/A				
TANK-15	Nickel Tank Emissions	Ronatec	TBD	TBD	196 gal	196 gal	2019	N/A	30901061	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	Bldg-B				
FUG-15	Nickel Tank Fugitives	TBD	TBD	TBD	196 gal	196 gal	TBD	N/A	30901061	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							TBD	N/A				
TANK-7	Cadmium Tank Emissions	Ronatec	TBD	TBD	236 gal	236 gal	2019	MESH-3	30901058	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	Bldg-B				
FUG-7	Cadmium Tank Fugitives	TBD	TBD	TBD	236 gal	236 gal	TBD	N/A	30901058	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							TBD	N/A				
TANK-10	Cadmium Tank Emissions	Ronatec	TBD	TBD	196 gal	196 gal	2019	MESH-4	30901058	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	Bldg-B				
FUG-10	Cadmium Tank Fugitives	TBD	TBD	TBD	196 gal	196 gal	TBD	N/A	30901058	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							TBD	N/A				
TANK-13	HCl Acid Tank Emissions	Ronatec	TBD	TBD	196 gal	196 gal	2019	N/A	30901015	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	Bldg-B				

Unit Number <sup>1</sup>	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity <sup>3</sup> (Specify Units)	Requested Permitted Capacity <sup>3</sup> (Specify Units)	Date of Manufacture <sup>2</sup>	Controlled by Unit #	Source Classi- fication Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) <sup>4</sup>	Replacing Unit No.	
							Date of Construction/ Reconstruction <sup>2</sup>	Emissions vented to Stack #					
FUG-13	HCl Acid Tank Fugitives	TBD	TBD	TBD	196 gal	196 gal	TBD	N/A	30901015	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified	<input type="checkbox"/> To Be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Replaced	N/A	N/A
							TBD	N/A					
TANK-20	Nitric Acid Tank Emissions	Ronatec	TBD	TBD	196 gal	196 gal	2019	N/A	30901015	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified	<input type="checkbox"/> To Be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Replaced	N/A	N/A
							2019	Bldg-B					
FUG-20	Nitric Acid Tank Fugitives	TBD	TBD	TBD	196 gal	196 gal	TBD	N/A	30901015	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified	<input type="checkbox"/> To Be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Replaced	N/A	N/A
							TBD	N/A					
TANK-24	Nitric Acid Tank Emissions	Ronatec	TBD	TBD	196 gal	196 gal	2019	N/A	30901015	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified	<input type="checkbox"/> To Be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Replaced	N/A	N/A
							2019	Bldg-B					
FUG-24	Nitric Acid Tank Fugitives	TBD	TBD	TBD	196 gal	196 gal	TBD	N/A	30901015	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified	<input type="checkbox"/> To Be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Replaced	N/A	N/A
							TBD	N/A					
HTR-1	Paint Both Heater	Banza B- Series	B-1000	5081000.17	LPG: 1,360 MBtu/hr	LPG: 1,360 MBtu/hr	Unknown	N/A	40201004	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified	<input type="checkbox"/> To Be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Replaced	N/A	N/A
							Unknown	Bldg-E1 & Bldg-E2					
MTS-1	Thermal Metal Sprayer	Oerlikon Metco	16-E	Unknown	7.95 lb/hr	7.95 lb/hr	Unknown	N/A	30904500	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified	<input checked="" type="checkbox"/> To Be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Replaced	N/A	N/A
							Unknown	Bldg-D1 & Bldg-D2					

<sup>1</sup> Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.

<sup>2</sup> Specify dates required to determine regulatory applicability.

<sup>3</sup> To properly account for power conversion efficiencies, generator set rated capacity shall be reported as the rated capacity of the engine in horsepower, not the kilowatt capacity of the generator set.

<sup>4</sup> "4SLB" means four stroke lean burn engine, "4SRB" means four stroke rich burn engine, "2SLB" means two stroke lean burn engine, "CI" means compression ignition, and "SI" means spark ignition



**Table 2-B: Insignificant Activities<sup>1</sup> (20.2.70 NMAC) OR Exempted Equipment (20.2.72 NMAC)**

All 20.2.70 NMAC (Title V) applications must list all Insignificant Activities in this table. All 20.2.72 NMAC applications must list Exempted Equipment in this table. If equipment listed on this table is exempt under 20.2.72.202.B.5, include emissions calculations and emissions totals for 202.B.5 "similar functions" units, operations, and activities in Section 6, Calculations. Equipment and activities exempted under 20.2.72.202 NMAC may not necessarily be Insignificant under 20.2.70 NMAC (and vice versa). Unit & stack numbering must be consistent throughout the application package. Per Exemptions Policy 02-012.00 (see [http://www.env.nm.gov/aqb/permit/aqb\\_pol.html](http://www.env.nm.gov/aqb/permit/aqb_pol.html)), 20.2.72.202.B NMAC Exemptions do not apply, but 20.2.72.202.A NMAC exemptions do apply to NOI facilities under 20.2.73 NMAC. List 20.2.72.301.D.4 NMAC Auxiliary Equipment for Streamline applications in Table 2-A. The List of Insignificant Activities (for TV) can be found online at <http://www.env.nm.gov/aqb/forms/InsignificantListTitleV.pdf>. TV sources may elect to enter both TV Insignificant Activities and Part 72 Exemptions on this form.

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction <sup>2</sup>	For Each Piece of Equipment, Check One
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction <sup>2</sup>	
H-1	One (1) Comfort Heater Unit	Delonghi	HFX60015L	< 5	20.72.202.B.(1) NMAC	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			7/3/2129	MMBtu	N/A	N/A	
H-2	Three (3) Comfort Heater Units	Intertek	DQ1711	< 5	20.72.202.B.(1) NMAC	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	MMBtu	N/A	N/A	
H-3	One (1) Comfort Heater Unit	Optimus	FH-101A	< 5	20.72.202.B.(1) NMAC	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			H-1382	MMBtu	N/A	N/A	
H-4	Two (2) Comfort Heater Units	Intertek	HPQ15G-M	< 5	20.72.202.B.(1) NMAC	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	MMBtu	N/A	N/A	
H-5	One (1) Comfort Heater Unit	Intertek	HC-0179	< 5	20.72.202.B.(1) NMAC	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	MMBtu	N/A	N/A	
H-6	One (1) Comfort Heater Unit	Honeywell	HZ0360TD1	< 5	20.72.202.B.(1) NMAC	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	MMBtu	N/A	N/A	
AB-1	Abrasive Basting	Clemco	ACDFM	-	20.72.202.B.(7) NMAC	Unknown	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	-	N/A	N/A	
AB-2	Abrasive Basting	Clemco	BMP-DBL220P	-	20.72.202.B.(7) NMAC	2019	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	-	N/A	2019	
DC-1	Dust Collector associated with Abrasive Basting	Clemco	TBD	2,800	20.72.202.B.(7) NMAC	TBD	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			TBD	CFM	N/A	TBD	
DC-2	Dust Collector associated with Abrasive Basting	Clemco	TBD	2,800	20.72.202.B.(7) NMAC	TBD	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			TBD	CFM	N/A	TBD	
MB-1	Microboiler	Navien	TBD	19,900	20.72.202.B.(5) NMAC	N/A	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input checked="" type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			TBD	Btu/hr	N/A	N/A	
MB-2	Microboiler	Navien	TBD	19,900	20.72.202.B.(5) NMAC	N/A	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input checked="" type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			TBD	Btu/hr	N/A	N/A	
M-1	Maintenance and Operations	N/A	N/A	N/A	20.72.202.A.(2)NMAC	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	N/A	N/A	N/A	
M-2	Loading and Unloading Operations (Forklift)	N/A	N/A	N/A	20.72.202.A.(3)NMAC	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	N/A	N/A	N/A	

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction <sup>2</sup>	For Each Piece of Equipment, Check One
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction <sup>2</sup>	
*Not a Source of Emissions							
SC-1 <sup>3</sup>	Solvent Cleaners/Washer	Westward	40 gal Part Washer	N/A	N/A	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	N/A	N/A	N/A	
SC-2 <sup>4</sup>	Solvent Cleaners/Washer	Safety Kleen	Model 81.8	N/A	N/A	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	N/A	N/A	N/A	
SB-1 <sup>5</sup>	Grinding & Sanding Operations	Dustron	DB12-18-15	N/A	N/A	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	N/A	N/A	N/A	
SB-2 <sup>5</sup>	Grinding & Sanding Operations	Dustron	DC24-36-2-15	N/A	N/A	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	N/A	N/A	N/A	
P-TANK <sup>6</sup>	Miscellaneous Tanks associated with Metal Plating Operations (26 Tanks)	TBD	TBD	Varies	N/A	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			TBD	Varies	N/A	N/A	

<sup>1</sup>Insignificant activities exempted due to size or production rate are defined in 20.2.70.300.D.6, 20.2.70.7.Q NMAC, and the NMED/AQB List of Insignificant Activities, dated September 15, 2008. Emissions from these insignificant activities do not need to be reported, unless specifically requested.

<sup>2</sup>Specify date(s) required to determine regulatory applicability.

<sup>3</sup>The Westward Solvent Cleaner/Washer does not use or emit any criteria pollutant

<sup>4</sup>The Safety Kleen Solvent Cleaner/Washer is a completely enclosed unit and not a source of emissions.

<sup>5</sup>AerSale Component Solutions operates handheld grinders and circular sanders within two dust collector booths. The dust collector booths are located indoors and are fully enclosed by the building.

<sup>6</sup>The Miscellaneous Tanks associated with Metal Plating Operations are not a source of emissions.

\*Units that are located at the facility, however are not considered a source of emissions.

## Table 2-C: Emissions Control Equipment

Unit and stack numbering must correspond throughout the application package. Only list control equipment for TAPs if the TAP's maximum uncontrolled emissions rate is over its respective threshold as listed in 20.2.72 NMAC, Subpart V, Tables A and B. In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions.

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s) <sup>1</sup>	Efficiency (% Control by Weight)	Method used to Estimate Efficiency
FILTER-1	Paint Booth Filters	2001	PM <sub>10</sub> & PM <sub>2.5</sub>	PAINT-1	PM/PM <sub>10</sub> /PM <sub>2.5</sub> : 99.54%	Manufacturer Specification
FILTER-3	Paint Booth Filters	N/A	PM <sub>10</sub> & PM <sub>2.5</sub>	PAINT-3	PM/PM <sub>10</sub> /PM <sub>2.5</sub> : 99.54%	Manufacturer Specification
MESH-3	Mesh- Pad Mist Eliminator	TBD	PM <sub>10</sub> & PM <sub>2.5</sub>	TANK-7	PM/PM <sub>10</sub> /PM <sub>2.5</sub> : 99.97% Cadmium Metal : 99.99%	TCEQ Chromium Plating & Anodizing Operations Using Chromic Acid Guidance: Table 12.20-1 Emission Factors for Chromium Electroplating & Table 12.20-4 Emission Factors for Electroplating-Other Metals
MESH-4	Mesh-Pad Mist Eliminator	TBD	PM <sub>10</sub> & PM <sub>2.5</sub>	TANK-10	PM/PM <sub>10</sub> /PM <sub>2.5</sub> : 99.97% Cadmium Metal : 99.99%	TCEQ Chromium Plating & Anodizing Operations Using Chromic Acid Guidance: Table 12.20-1 Emission Factors for Chromium Electroplating & Table 12.20-4 Emission Factors for Electroplating-Other Metals

<sup>1</sup> List each control device on a separate line. For each control device, list all emission units controlled by the control device.

\*No emission factors were provided in the TCEQ Guidance regarding Nickel electroplating with a mesh-pad mist eliminator; therefore, controlled emissions are represented as the same as uncontrolled emissions as a conservative estimation.

**Table 2-D: Maximum Emissions** (under normal operating conditions)

☐ This Table was intentionally left blank because it would be identical to Table 2-E.

Maximum Emissions are the emissions at maximum capacity and prior to (in the absence of) pollution control, emission-reducing process equipment, or any other emission reduction. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless otherwise approved by the Department. List Hazardous Air Pollutants (HAP) & Toxic Air Pollutants (TAPs) in Table 2-I. Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "--" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NO <sub>x</sub>		CO		VOC		SO <sub>x</sub>		PM <sup>1</sup>		PM <sub>10</sub>		PM <sub>2.5</sub>		H <sub>2</sub> S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
PAINT-1 <sup>2,3</sup>	-	-	-	-	14.23	0.35	-	-	-	-	3.14	0.102	5.87	0.17				
PAINT-3 <sup>2,3</sup>	-	-	-	-	7.23	0.029	-	-	-	-	-	-	0.019	7.33E-05				
TANK-22	-	-	-	-	-	-	-	-	-	-	5.00E-03	0.010	5.00E-03	0.010				
FUG-22	-	-	-	-	-	-	-	-	-	-	5.10E-05	1.06E-04	5.10E-05	1.06E-04				
TANK-27	-	-	-	-	-	-	-	-	-	-	4.41E-03	9.17E-03	4.41E-03	9.17E-03				
FUG-27	-	-	-	-	-	-	-	-	-	-	4.50E-05	9.36E-05	4.50E-05	9.36E-05				
TANK-15	-	-	-	-	-	-	-	-	-	-	0.099	0.21	0.099	0.21				
FUG-15	-	-	-	-	-	-	-	-	-	-	1.01E-03	2.11E-03	1.01E-03	2.11E-03				
TANK-7	-	-	-	-	-	-	-	-	-	-	7.56E-03	0.016	7.56E-03	0.016				
FUG-7	-	-	-	-	-	-	-	-	-	-	7.71E-05	1.60E-04	7.71E-05	1.60E-04				
TANK-10	-	-	-	-	-	-	-	-	-	-	6.30E-03	0.013	6.30E-03	0.013				
FUG-10	-	-	-	-	-	-	-	-	-	-	6.43E-05	1.34E-04	6.43E-05	1.34E-04				
TANK-13	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
FUG-13	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
TANK-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
FUG-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
TANK-24	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
FUG-24	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
HTR-1	0.19	0.82	0.11	0.48	0.014	0.063	-	-	-	-	0.010	0.044	0.010	0.044				
<b>Totals</b>	0.19	0.82	0.11	0.48	21.47	0.44	-	-	-	-	3.27	0.40	6.03	0.47	-	-	-	-

<sup>1</sup> Condensable Particulate Matter: Include condensable particulate matter emissions for PM<sub>10</sub> and PM<sub>2.5</sub> if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM<sub>10</sub> and PM<sub>2.5</sub>. Particulate matter (PM) is not subject to an ambient air quality standard, but it is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

<sup>2</sup> lb/hr emissions are based on the assumption that all paint booths will be operating simultaneously.

<sup>3</sup> VOC & PM emissions are based on the assumption that the gal/yr flowrates used in the calculations will not be exceeded, even if both paint booths are used at the same time on an hourly basis. lb/hr emissions conservatively assume both paint booths operating at the same time, but tpy emissions assume that even though both paint booths have the ability to operate at the same time, they will not be operating for 8,760 hours and will be limited by the gal/yr flowrates and paint that the facility stores. The total lb/hr emissions are based on the maximum emission among the paints, because only one paint gun will operate at a given time per paint booth.

"-" Pollutant is not expected

**Table 2-E: Requested Allowable Emissions**

Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "--" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E<sup>-4</sup>).

Unit No.	NOx		CO		VOC		SOx		PM <sup>1</sup>		PM <sub>10</sub>		PM <sub>2.5</sub>		H <sub>2</sub> S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
PAINT-1 <sup>2,3,4</sup>	-	-	-	-	11.27	0.35	-	-	-	-	0.014	4.68E-04	0.027	7.79E-04	-	-	-	-
PAINT-3 <sup>2,3,4</sup>	-	-	-	-	7.23	0.029	-	-	-	-	-	-	8.55E-05	3.37E-07	-	-	-	-
TANK-22 <sup>5</sup>	-	-	-	-	-	-	-	-	-	-	5.00E-03	0.010	5.00E-03	0.010	-	-	-	-
FUG-22	-	-	-	-	-	-	-	-	-	-	5.10E-05	1.06E-04	5.10E-05	1.06E-04	-	-	-	-
TANK-27 <sup>5</sup>	-	-	-	-	-	-	-	-	-	-	4.41E-03	9.17E-03	4.41E-03	9.17E-03	-	-	-	-
FUG-27	-	-	-	-	-	-	-	-	-	-	4.50E-05	9.36E-05	4.50E-05	9.36E-05	-	-	-	-
TANK-15 <sup>5,6</sup>	-	-	-	-	-	-	-	-	-	-	0.099	0.21	0.099	0.21	-	-	-	-
FUG-15	-	-	-	-	-	-	-	-	-	-	1.01E-03	2.11E-03	1.01E-03	2.11E-03	-	-	-	-
TANK-7 <sup>5</sup>	-	-	-	-	-	-	-	-	-	-	2.75E-06	5.72E-06	2.75E-06	5.72E-06	-	-	-	-
FUG-7	-	-	-	-	-	-	-	-	-	-	7.71E-05	1.60E-04	7.71E-05	1.60E-04	-	-	-	-
TANK-10 <sup>5</sup>	-	-	-	-	-	-	-	-	-	-	2.34E-06	4.77E-06	2.34E-06	4.77E-06	-	-	-	-
FUG-10	-	-	-	-	-	-	-	-	-	-	6.43E-05	1.34E-04	6.43E-05	1.34E-04	-	-	-	-
TANK-13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FUG-13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TANK-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FUG-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TANK-24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FUG-24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HTR-1	0.19	0.82	0.11	0.48	0.014	0.063	-	-	-	-	0.010	0.044	0.010	0.044	-	-	-	-
<b>Totals</b>	0.19	0.82	0.11	0.48	18.52	0.44	-	-	-	-	0.13	0.27	0.15	0.27	-	-	-	-

<sup>1</sup> Condensable Particulate Matter: Include condensable particulate matter emissions for PM<sub>10</sub> and PM<sub>2.5</sub> if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to

<sup>2</sup> PM emissions are controlled with a 99.43% reduction efficiency using paint booth particulate filters.

<sup>3</sup> lb/hr emissions are based on the assumption that both paint booths will be operating simultaneously.

<sup>4</sup> VOC & PM emissions are based on the assumption that the gal/yr flowrates used in the calculations will not be exceeded, even if both paint booths are used at the same time on an hourly basis. lb/hr emissions conservatively assume both paint booths operating at the same time, but tpy emissions assume that even though both paint booths have the ability to operate at the same time, they will not be operating for 8,760 hours and will be limited by the gal/yr flowrates and paint that the facility stores. The total lb/hr emissions are based on the maximum emission among the paints, because only one paint gun will operate at a given time per paint booth.

<sup>5</sup> Tank emissions are captured by a hood (with a 98% capture efficiency).

<sup>6</sup> No emission factors were provided in the TCEQ Guidance regarding Nickel electroplating with a mesh-pad mist eliminator; therefore, controlled emissions are represented as the same as uncontrolled emissions as a conservative estimation.

"-" Pollutant is not expected

**Table 2-F: Additional Emissions during Startup, Shutdown, and Routine Maintenance (SSM)**

☒ This table is intentionally left blank since all emissions at this facility due to routine or predictable startup, shutdown, or scheduled maintenance are no higher than those listed in Table 2-E and a malfunction emission limit is not already permitted or requested. If you are required to report GHG emissions as described in Section 6a, include any GHG emissions during Startup, Shutdown, and/or Scheduled Maintenance (SSM) in Table 2-P. Provide an explanations of SSM emissions in Section 6 and 6a.

All applications for facilities that have emissions during routine or predictable startup, shutdown or scheduled maintenance (SSM)<sup>1</sup>, including NOI applications, must include in this table the Maximum Emissions during routine or predictable startup, shutdown and scheduled maintenance (20.2.7 NMAC, 20.2.72.203.A.3 NMAC, 20.2.73.200.D.2 NMAC). In Section 6 and 6a, provide emissions calculations for all SSM emissions reported in this table. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications

([https://www.env.nm.gov/aqb/permit/aqb\\_pol.html](https://www.env.nm.gov/aqb/permit/aqb_pol.html)) for more detailed instructions. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

[illegible]

<sup>1</sup> **For instance**, if the short term steady-state Table 2-E emissions are 5 lb/hr and the SSM rate is 12 lb/hr, enter 7 lb/hr in this table. If the annual steady-state Table 2-E emissions are 21.9 TPY, and the number of scheduled SSM events result in annual emissions of 31.9 TPY, enter 10.0 TPY in the table below.

<sup>2</sup> **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for TSP unless TSP is set equal to PM10 and PM2.5.

**Table 2-G: Stack Exit and Fugitive Emission Rates for Special Stacks**

☐ I have elected to leave this table blank because this facility does not have any stacks/vents that split emissions from a single source or combine emissions from more than one source listed in table 2-A. Additionally, the emission rates of all stacks match the Requested allowable emission rates stated in Table 2-E.

Use this table to list stack emissions (requested allowable) from split and combined stacks. List Toxic Air Pollutants (TAPs) and Hazardous Air Pollutants (HAPs) in Table 2-I. List all fugitives that are associated with the normal, routine, and non-emergency operation of the facility. Unit and stack numbering must correspond throughout the application package. Refer to Table 2-E for instructions on use of the “-” symbol and on significant figures.

Stack No.	Serving Unit Number(s) from Table 2-A	NOx		CO		VOC		SOx		PM		PM10		PM2.5	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Bldg-D1	PAINT-1, HTR-1	0.094	0.41	0.054	0.24	5.64	0.21	-	-	-	-	0.012	0.022	0.018	0.023
Bldg-D2	PAINT-1, HTR-1	0.094	0.41	0.054	0.24	5.64	0.21	-	-	-	-	0.012	0.022	0.018	0.023
Bldg-B	TANK-22, TANK-27, TANK-15, TANK-7, TANK-10, TANK-13, TANK-20, TANK-24	-	-	-	-	-	-	-	-	-	-	0.11	0.23	0.11	0.23
FUG-Bldg-B	FUG-22, FUG-27, FUG-15, FUG-7, FUG- 10, FUG-13, FUG-20, FUG-24	-	-	-	-	-	-	-	-	-	-	1.25E-03	2.60E-03	1.25E-03	2.60E-03
<b>Totals:</b>		0.19	0.82	0.11	0.48	11.28	0.41	-	-	-	-	0.13	0.27	0.15	0.27

If the facility has multiple operating scenarios, complete a separate Table 2-H for each scenario and, for each, type scenario name here:

[illegible]



**Table 2-I: Stack Exit and Fugitive Emission Rates for HAPs and TAPs**

In the table below, report the Potential to Emit for each HAP from each regulated emission unit listed in Table 2-A, only if the entire facility emits the HAP at a rate greater than or equal to one (1) ton per year. For each such emission unit, HAPs shall be reported to the nearest 0.1 tpy. Each facility-wide Individual HAP total and the facility-wide Total HAPs shall be the sum of all HAP sources calculated to the nearest 0.1 ton per year. Per 20.2.72.403.A.1 NMAC, facilities not exempt [see 20.2.72.402.C NMAC] from TAP permitting shall report each TAP that has an uncontrolled emission rate in excess of its pounds per hour screening level specified in 20.2.72.502 NMAC. TAPs shall be reported using one more significant figure than the number of significant figures shown in the pound per hour threshold corresponding to the substance. Use the HAP nomenclature as it appears in Section 112 (b) of the 1990 CAAA and the TAP nomenclature as it listed in 20.2.72.502 NMAC. Include tank-flashing emissions estimates of HAPs in this table. For each HAP or TAP listed, fill all cells in this table with the emission numbers or a "-" symbol. A "--" symbol indicates that emissions of this pollutant are not expected or the pollutant is emitted in a quantity less than the threshold amounts described above.

Stack No.	Unit No.(s)	Total HAPs		Methyl Amyl Ketone <input type="checkbox"/> HAP or <input checked="" type="checkbox"/> TAP		Cyclohexanone <input type="checkbox"/> HAP or <input checked="" type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Bldg-D1 <sup>1,2</sup>	PAINT-1, HTR-1	4.22	0.07	2.41	3.47E-03	0.42	4.62E-04										
Bldg-D2 <sup>1,2</sup>	PAINT-1, HTR-1	4.22	0.07	2.41	3.47E-03	0.42	4.62E-04										
Bldg-B	TANK-22, TANK-27, TANK-15, TANK-7, TANK-10, TANK-13, TANK-20, TANK-24	6.89E-04	1.43E-03	-	-	0.048	0.099										
FUG-Bldg-B	FUG-22, FUG-27, FUG-15, FUG-7, FUG-10, FUG-13, FUG-20, FUG-24	7.03E-06	1.46E-05	-	-	4.86E-04	1.01E-03										
Bldg-D3	PAINT-3	0.69	2.71E-03	-	-	-	-										
<b>Totals:</b>		9.12	0.14	4.81	6.94E-03	0.89	0.10										

<sup>1</sup>lb/hr emissions are based on the assumption that both paint booths will be operating simultaneously.

<sup>2</sup>HAP & TAP emissions are based on the assumption that the gal/yr flowrates used in the calculations will not be exceeded, even if both paint booths are used at the same time on an hourly basis. lb/hr emissions conservatively assume both paint booths operating at the same time, but tpy emissions assume that even though both paint booths have the ability to operate at the same time, they will not be operating for 8,760 hours and will be limited by the gal/yr flowrates and paint that the facility stores. The total lb/hr emissions are based on the maximum emission among the paints, because only one paint gun will operate at a given time per paint booth.

Table 2-J: Fuel

Specify fuel characteristics and usage. Unit and stack numbering must correspond throughout the application package.

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, ...)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur <sup>1</sup>	% Ash
HTR-1	Propane	Purchased Comercial	94,000 Btu/gal	14 gal/hr	126,740 gal/hr	Negligible	Negligible

<sup>1</sup>Based on AP-42 Appendix A, LPG has negligible sulfur content



### Table 2-L: Tank Data

Include appropriate tank-flashing modeling input data. Use an addendum to this table for unlisted data categories. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary. See reference Table 2-L2. Note: 1.00 bbl = 10.159 M3 = 42.0 gal

[illegible]

<sup>1</sup>The process tanks do not have a roof; however, when tanks are not in operations the tanks are covered. The metal plating operations will operate 80 hours a week.

Table 2-L2: Liquid Storage Tank Data Codes Reference Table

Roof Type	Seal Type, Welded Tank Seal Type		Seal Type, Riveted Tank Seal Type		Roof, Shell Color	Paint Condition
FX: Fixed Roof	Mechanical Shoe Seal	Liquid-mounted resilient seal	Vapor-mounted resilient seal	Seal Type	WH: White	Good
IF: Internal Floating Roof	A: Primary only	A: Primary only	A: Primary only	A: Mechanical shoe, primary only	AS: Aluminum (specular)	Poor
EF: External Floating Roof	B: Shoe-mounted secondary	B: Weather shield	B: Weather shield	B: Shoe-mounted secondary	AD: Aluminum (diffuse)	
P: Pressure	C: Rim-mounted secondary	C: Rim-mounted secondary	C: Rim-mounted secondary	C: Rim-mounted secondary	LG: Light Gray	
					MG: Medium Gray	
					BL: Black	
					OT: Other (specify)	

Note: 1.00 bbl = 0.159 M³ = 42.0 gal

Table 2-M: Materials Processed and Produced (Use additional sheets as necessary.)

Material Processed				Material Produced			
Description	Chemical Composition	Phase (Gas, Liquid, or Solid)	Quantity (specify units)	Description	Chemical Composition	Phase	Quantity (specify units)
Miscellaneous Paints and Solvents	Mixed VOCs, HAPs and TAPs	Liquid	3,036 gal/yr	N/A			

### Table 2-N: CEM Equipment

Enter Continuous Emissions Measurement (CEM) Data in this table. If CEM data will be used as part of a federally enforceable permit condition, or used to satisfy the requirements of a state or federal regulation, include a copy of the CEM's manufacturer specification sheet in the Information Used to Determine Emissions attachment. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

[illegible]

**Table 2-O: Parametric Emissions Measurement Equipment**

Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

[illegible]

**Table 2-P: Greenhouse Gas Emissions**

Applications submitted under 20.2.70, 20.2.72, & 20.2.74 NMAC are required to complete this Table. Power plants, Title V major sources, and PSD major sources must report and calculate all GHG emissions for each unit. Applicants must report potential emission rates in short tons per year (see Section 6.a for assistance). Include GHG emissions during Startup, Shutdown, and Scheduled Maintenance in this table. For minor source facilities that are not power plants, are not Title V, or are not PSD, there are three options for reporting GHGs 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHG as a second separate unit; OR 3) check the following box ☒ By checking this box, the applicant acknowledges the total CO<sub>2</sub>e emissions are less than 75,000 tons per year.

[illegible]

**GWP (Global Warming Potential):** Applicants must use the most current GWPs codified in Table A-1 of 40 CFR part 98. GWPs are subject to change, therefore, applicants need to check 40 CFR 98 to confirm GWP values.

<sup>2</sup> For **HFCs** or **PFCs** describe the specific HFC or PFC compound and use a separate column for each individual compound.

<sup>3</sup> For each new compound, enter the appropriate GWP for each HFC or PFC compound from Table A-1 in 40 CFR 98.

<sup>4</sup> Green house gas emissions on a **mass basis** is the ton per year green house gas emission before adjustment with its GWP.

<sup>5</sup> CO<sub>2</sub>e means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the green house gas by its GWP.



# Section 3

## Application Summary

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The **Application Summary** shall include a brief description of the facility and its process, the type of permit application, the applicable regulation (i.e. 20.2.72.200.A.X, or 20.2.73 NMAC) under which the application is being submitted, and any air quality permit numbers associated with this site. If this facility is to be collocated with another facility, provide details of the other facility including permit number(s). In case of a revision or modification to a facility, provide the lowest level regulatory citation (i.e. 20.2.72.219.B.1.d NMAC) under which the revision or modification is being requested. Also describe the proposed changes from the original permit, how the proposed modification will affect the facility's operations and emissions, de-bottlenecking impacts, and changes to the facility's major/minor status (both PSD & Title V).

The **Process Summary** shall include a brief description of the facility and its processes.

**Startup, Shutdown, and Maintenance (SSM) routine or predictable emissions:** Provide an overview of how SSM emissions are accounted for in this application. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications ([http://www.env.nm.gov/aqb/permit/app\\_form.html](http://www.env.nm.gov/aqb/permit/app_form.html)) for more detailed instructions on SSM emissions.

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AerSale Component Solutions is submitting this application for a significant revision to NSR Permit No. 8491 pursuant to 20.2.72 NMAC for the AerSale facility.

The AerSale Component Solutions (AerSale) facility repairs and restores airplane components and equipment such as thrust reversers, cargo doors, and flight control surfaces. Repairs and restoration include mechanical component repairs, composite flight surface repairs, welding, and painting or metal plating of finished product. Other operations include grinding, sanding, abrasive blasting, and use of solvent cleaners to repair and restore airplane components. The AerSale facility is located in Rio Rancho, NM in Sandoval County.

The following new unit will be installed at this facility:

- One (1) Xylan paint booth located in Building D (PAINT-3)
- Two (2) dust collectors associated with abrasive blasting (exempt pursuant 20.2.202.B.7 NMAC)
- Two (2) micro-boilers (exempt pursuant to 20.2.72.202.B(5) NMAC)

The following units names will be changed at this facility:

- TANK-16 and FUG-16 will become TANK-22 and FUG-22. The units themselves remain the same, but unit names were changed to match internal records.
- TANK-17 and FUG-17 will become TANK-27 and FUG-27. The units themselves remain the same, but unit names were changes to match internal records.

The following unit will be removed from this facility:

- PAINT-2 is removed with this application.
- MTS-1 is removed with this application.

Additionally, per NSR Permit Condition A800.A.4, alternate paint may be used in lieu of the permitted paints so long as: a)  $PM_{10}$ ,  $PM_{2.5}$ , TAP, HAP, and VOC percentages are not higher than the percentages for any permitted paint; b) throughputs and emission limits do not exceed those in Table 106.A, Table 106.B, and Condition 106.C; c)  $PM_{10}$ ,  $PM_{2.5}$ , VOC, HAP, and TAP emissions are calculated for each new paint; and d) SDS for alternative paints are kept on site. AerSale will be updating the paints used in PAINT-1 and based on current facility operations.

Other units and operations that are not considered as a source of emissions include two (2) solvent cleaner/washers, grinding and sanding operations, and miscellaneous tanks associated with the metal plating operations. The Westward solvent cleaner does not emit any emissions and the Safety Kleen solvent cleaner is a completely enclosed unit, therefore is not considered a source of emissions. AerSale operates a total of four dust collector booths, two of which handle handheld grinding and circular sanding

operations, while the other two handle abrasive blasting operations. The dust collector booths are located indoors and are fully enclosed by the building and are therefore not considered a source of emissions. Additionally, the twenty-six (26) miscellaneous tanks associated with metal plating operations do not store, contain, or emit any emissions. The majority of these tanks are water rinse tanks that support the metal plating operations.

Section 4

Process Flow Sheet

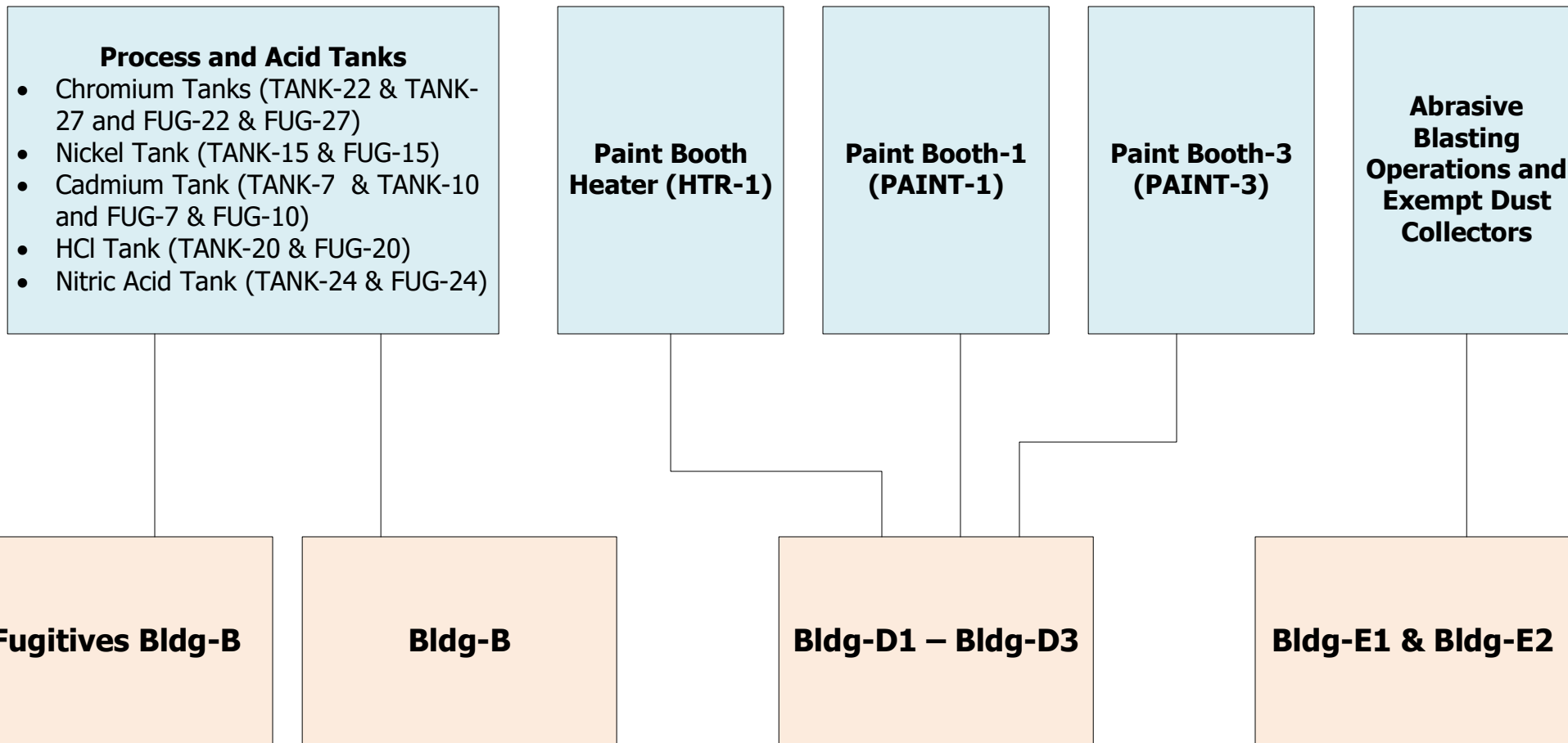
A **process flow sheet** and/or block diagram indicating the individual equipment, all emission points and types of control applied to those points. The unit numbering system should be consistent throughout this application.

The only processes at this facility with the potential for emissions will be the metal plating operations and the paint booth operations. The metal plating process will involve dipping and coating airplane components in bathes contain acidic, basic, and metallic solutions. The emission associated with the metal plating operations are from the evaporation losses of the process and acid tanks. The paint booth processes will involve using mechanical sprayers powered by compressed air to paint airplane components. Due to the number of identical emission sources and the straightforward processes, a process flow diagram has not been included with this application, however a process description of the facility operations can be found below. The process description is divided between two different repair and restoration actives occurring at the AerSale facility: Landing Gear Shop and Flight Controls/Nacelles.

Landing Gear Shop	Nacelles/ Flight Controls
1. Receiving Inspection	1. Receiving Inspection
2. Disassembly	2. Cleaning
3. Cleaning and abrasive blasting	3. Disassembly
4. Cadmium strip	4. Evaluation
5. Secondary abrasive blasting	5. Sheet metal repairs as necessary
6. Magnetic Particle Inspection	6. Composite repairs as necessary
7. Evaluation	7. Primer and topcoat application
8. Repair as necessary	8. Final Assembly
9. Surface plating as required	
10. Bushing installation	
11. Primer and topcoat application	
12. Final Assembly	

# AerSale Solution Component Process Flow Diagram

## Emission Units and Activity



## Emission Sources

# Section 5

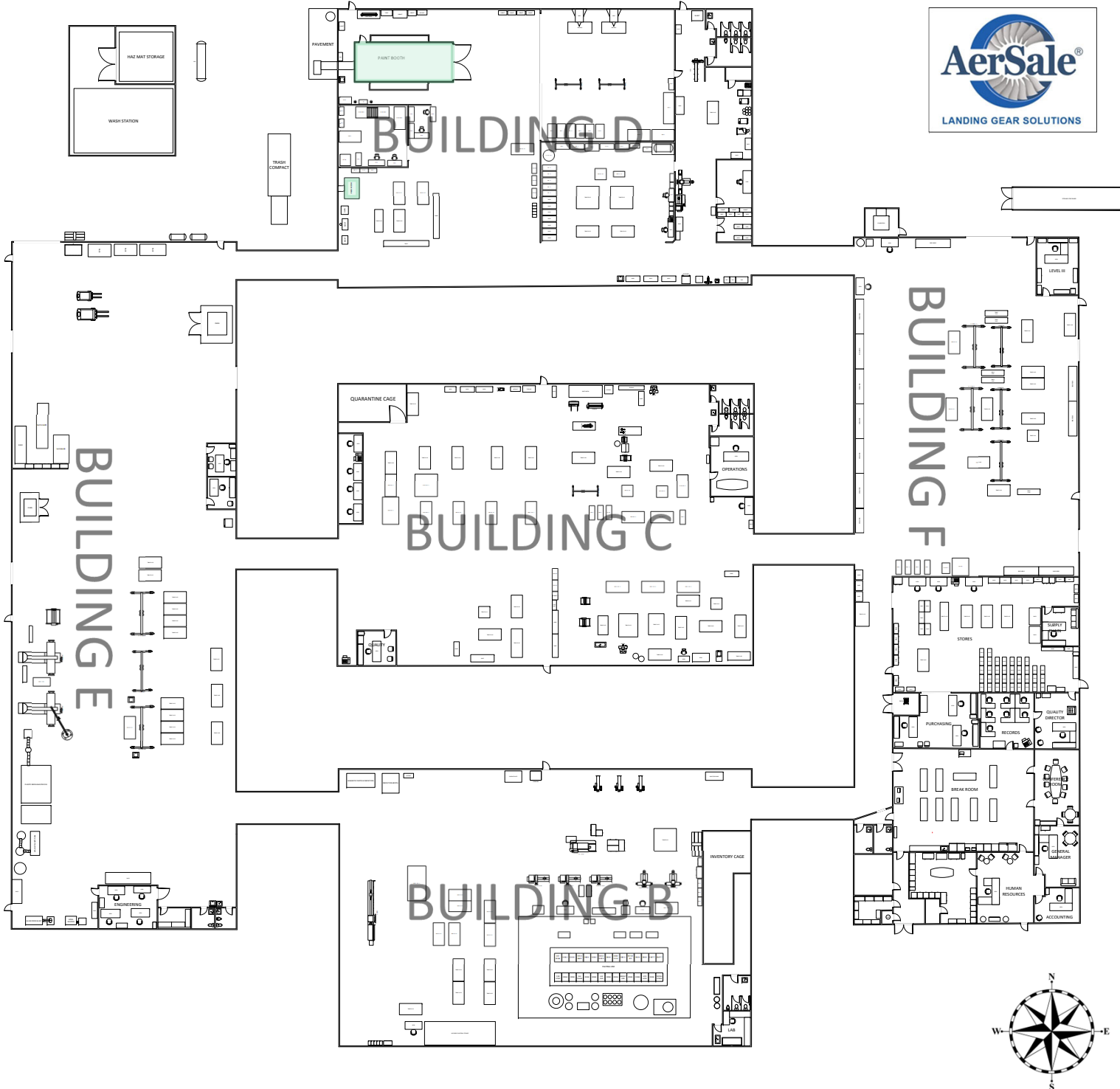
## Plot Plan Drawn to Scale

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A **plot plan drawn to scale** showing emissions points, roads, structures, tanks, and fences of property owned, leased, or under direct control of the applicant. This plot plan must clearly designate the restricted area as defined in UA1, Section 1-D.12. The unit numbering system should be consistent throughout this application.

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A plot plan is attached on the following page.



# Section 6

## All Calculations

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**Show all calculations** used to determine both the hourly and annual controlled and uncontrolled emission rates. All calculations shall be performed keeping a minimum of three significant figures. Document the source of each emission factor used (if an emission rate is carried forward and not revised, then a statement to that effect is required). If identical units are being permitted and will be subject to the same operating conditions, submit calculations for only one unit and a note specifying what other units to which the calculations apply. All formulas and calculations used to calculate emissions must be submitted. The "Calculations" tab in the UA2 has been provided to allow calculations to be linked to the emissions tables. Add additional "Calc" tabs as needed. If the UA2 or other spread sheets are used, all calculation spread sheet(s) shall be submitted electronically in Microsoft Excel compatible format so that formulas and input values can be checked. Format all spread sheets and calculations such that the reviewer can follow the logic and verify the input values. Define all variables. If calculation spread sheets are not used, provide the original formulas with defined variables. Additionally, provide subsequent formulas showing the input values for each variable in the formula. All calculations, including those calculations are imbedded in the Calc tab of the UA2 portion of the application, the printed Calc tab(s), should be submitted under this section.

**Tank Flashing Calculations:** The information provided to the AQB shall include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., NOI, permit, or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis. If Hysis is used, all relevant input parameters shall be reported, including separator pressure, gas throughput, and all other relevant parameters necessary for flashing calculation.

**SSM Calculations:** It is the applicant's responsibility to provide an estimate of SSM emissions or to provide justification for not doing so. In this Section, provide emissions calculations for Startup, Shutdown, and Routine Maintenance (SSM) emissions listed in the Section 2 SSM and/or Section 22 GHG Tables and the rational for why the others are reported as zero (or left blank in the SSM/GHG Tables). Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications ([http://www.env.nm.gov/aqb/permit/app\\_form.html](http://www.env.nm.gov/aqb/permit/app_form.html)) for more detailed instructions on calculating SSM emissions. If SSM emissions are greater than those reported in the Section 2, Requested Allowables Table, modeling may be required to ensure compliance with the standards whether the application is NSR or Title V. Refer to the Modeling Section of this application for more guidance on modeling requirements.

**Glycol Dehydrator Calculations:** The information provided to the AQB shall include the manufacturer's maximum design recirculation rate for the glycol pump. If GRI-Glycalc is used, the full input summary report shall be included as well as a copy of the gas analysis that was used.

**Road Calculations:** Calculate fugitive particulate emissions and enter haul road fugitives in Tables 2-A, 2-D and 2-E for:

1. If you transport raw material, process material and/or product into or out of or within the facility and have PER emissions greater than 0.5 tpy.
2. If you transport raw material, process material and/or product into or out of the facility more frequently than one round trip per day.

### Significant Figures:

- A. All emissions standards are deemed to have at least two significant figures, but not more than three significant figures.
- B. At least 5 significant figures shall be retained in all intermediate calculations.
- C. In calculating emissions to determine compliance with an emission standard, the following rounding off procedures shall be used:

- (1) If the first digit to be discarded is less than the number 5, the last digit retained shall not be changed;
- (2) If the first digit discarded is greater than the number 5, or if it is the number 5 followed by at least one digit other than the number zero, the last figure retained shall be increased by one unit; **and**
- (3) If the first digit discarded is exactly the number 5, followed only by zeros, the last digit retained shall be rounded upward if it is an odd number, but no adjustment shall be made if it is an even number.
- (4) The final result of the calculation shall be expressed in the units of the standard.

**Control Devices:** In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions. The applicant can indicate in this section of the application if they chose to not take credit for the reduction in emission rates. For notices of intent submitted under 20.2.73 NMAC, only uncontrolled emission rates can be considered to determine applicability unless the state or federal Acts require the control. This information is necessary to determine if federally enforceable conditions are necessary for the control device, and/or if the control device produces its own regulated pollutants or increases emission rates of other pollutants.

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#### **Unit PAINT-1, PAINT-3 – Paint Booths**

Paint emission were quantified from the Material Safety Data Sheets (SDS) and from the proposed maximum paint application rates. The hourly paint consumption rate was based on the gallon per hour flow rate of the paint gun multiplied by a 25% safety factor. A paint gun will operate a maximum of 30 min per a given hour; therefore, the hourly paint consumption rate was reduced by 50%. The yearly paint consumption rate was based on the yearly paint consumption in 2023 multiplied by a 100% safety factor. The paint sprayer used by AerSale operates at a high pressure; therefore, the transfer efficiency is assumed to be 30% according to "Pollution Prevention Opportunity Data Sheet" (included in Section 7 for reference).

For each paint type, the spreadsheet identifies the chemical and weight composition as determined from the SDS. The paint composition was then sorted by weight percentage to determine the VOC, HAP, TAP, PM<sub>10</sub>, and PM<sub>2.5</sub> contents. The composition content was then multiplied by the total density of the paint to determine the relative density of each constituent in units of pounds per gallon (lb/gal). The relative density of each constituent is then multiplied by the paint consumption rate and the transfer efficiency to determine the hourly and annual emission rate. The yearly emission rate is based on the assumption that the gal/yr flowrates used in the calculations will not be exceeded, even if PAINT-1 and PAINT-3 are used at the same time on an hourly basis. lb/hr emissions conservatively assume all paint booths operate at the same time, but tpy emissions assume that even though all paint booths have the ability to operate at the same time, they will not be operating for 8,760 hours and will be limited by the gal/yr flowrates and paint that the facility stores.

#### **Units TANK-22, TANK-27, FUG-22 & FUG-27 – Chromium Plating Tanks**

Chromium Plating emissions were quantified from TCEQ Guidance Package – “Chromium Plating & Anodizing Operation using Chromic Acid”. Uncontrolled and controlled emission factors for PM and Chromium compounds were taken from Table 12.20-2: Emission Factors for Chromate Acid Anodizing. The uncontrolled and controlled emission rate was calculated by multiplying the associated emission factor by the tank surface area. The process tanks have a capture hood that operates at a 98% capture efficiency according to “Industrial Ventilation, A Manual of Recommended Practices”. The mesh-pad mist eliminator associated with the capture hood controls the Chromium tank. The associated emission that are not captured by the hood are considered fugitive emissions. The building retains a portion of the fugitive emission before the emissions escape out of the building. The building has a capture efficiency of 50% according to TCEQ Guidance Package – “Chromium Plating and Anodizing Operation Using Chromic Acid Guidance”. The tanks will operate a total of 80 hours a week. When the tanks are not in operation, the tanks will be covered.

#### **Unit TANK-15 & FUG-15 – Nickel Plating Tank**

Nickel Plating emissions were quantified from TCEQ Guidance Package – “Chromium Plating & Anodizing Operation using Chromic Acid”. Uncontrolled emission factors for Nickel compounds were taken from Table 12.20-4 Emission Factor for Electroplating – Other Metals. The total uncontrolled PM emission factors for PM emissions were taken from Table 12.20-1 Emission Factors for Chromium Electroplating. The total uncontrolled PM emission factor was adjusted based on the ratio of the nickel and chromium emission factor (Adjusted Particulate Matter Emission Factor for Nickel tank = Emission Factor of Nickel Compounds ÷ Emission Factor of Chromium Compounds). No emission factors were provided in the TCEQ guidance regarding Nickel electroplating with a mesh-pad mist eliminator; therefore, controlled emissions are represented as the same as uncontrolled emissions as a conservative estimation.

The uncontrolled emission rate was calculated by multiplying the associated emission factor by the total amperage of the tank. The process tanks have a capture hood that operates at a 98% capture efficiency according to the “Industrial Ventilation, A Manual of Recommended Practices”. The mesh-pad mist eliminator associated with the capture hood controls the nickel tank. The associated emission that are not captured by the hood are considered fugitive emissions. The building retains a portion of the fugitive emission before the emissions escape out of the building. The building has a capture efficiency of 50% according to TCEQ Guidance Package – “Chromium Plating and Anodizing Operation Using Chromic Acid Guidance”. The tanks will operate a total of 80 hours a week. When the tanks are not in operation, the tanks will be covered.



**Unit TANK-7, FUG-7, TANK-10, FUG-10 – Cadmium Plating Tank**

Cadmium Plating emissions were quantified from TCEQ Guidance Package – “Chromium Plating & Anodizing Operation using Chromic Acid”. Uncontrolled and controlled emission factors for Cadmium compounds were taken from Table 12.20-4 Emission Factor for Electroplating – Other Metals. The total controlled and uncontrolled PM emission factors for PM emissions were taken from Table 12.20-1 Emission Factors for Chromium Electroplating. The total PM emission factors were adjusted based on the ratio of the cadmium and chromium emission factor (Adjusted Particulate Matter Emission Factor for Cadmium tanks = Emission Factor of Cadmium Compounds ÷ Emission Factor of Chromium Compounds).

The emission rate was calculated by multiplying the associated emission factor by the total amperage of the tank. The process tanks have a capture hood that operates at a 98% capture efficiency according to the “Industrial Ventilation, A Manual of Recommended Practices”. The mesh-pad mist eliminator associated with the capture hood controls the cadmium tanks. The associated emission that are not captured by the hood are considered fugitive emissions. The building retains a portion of the fugitive emission before the emissions escape out of the building. The building has a capture efficiency of 50% according to TCEQ Guidance Package – “Chromium Plating and Anodizing Operation Using Chromic Acid Guidance”. The tanks will operate a total of 80 hours a week. When the tanks are not in operation, the tanks will be covered.

**Unit TANK-13, FUG-13 – Hydrochloric (HCl) Acid Tank**

Hydrochloric acid emissions were quantified from the “Methods for Estimating Air Emissions from Chemical Manufacture Facilities”. The evaporation rate was calculated using equation 3-24. The HCl mass transfer coefficient was calculated using equation 3-27. Additionally the saturated vapor pressure was calculated from “Perry’s Chemical Engineering Handbook; 8<sup>th</sup> Edition” using table 2-11: Partial Pressures of Water over Aqueous Solution of HCl and table 2-12 Partial Pressure of HCL over Aqueous Solutions of HCl.

The acid tanks are uncontrolled and have a capture hood that operates at a 98% capture efficiency according to Industrial Ventilation, A Manual of Recommended Practices. The associated emission that are not captured by the hood are considered fugitive emissions. The building retains a portion of the fugitive emission before the emissions escape out of the building. The building has a capture efficiency of 50% according to TCEQ Guidance Package – “Chromium Plating and Anodizing Operation Using Chromic Acid Guidance”. The tanks will operate a total of 80 hours a week. When the tanks are not in operation, the tanks will be covered.

**Unit TANK-20, FUG-20, TANK-24, FUG-24 – Nitric Acid Tank**

Nitric acid emissions were quantified from the “Methods for Estimating Air Emissions from Chemical Manufacture Facilities”. The evaporation rate was calculated using equation 3-24. The nitric acid mass transfer coefficient was calculated using equation 3-27. Additionally the saturated vapor pressure was calculated from “Perry’s Chemical Engineering Handbook; 8<sup>th</sup> Edition” using table 2-18: Partial Pressure of HNO<sub>3</sub> over Aqueous Solution of HNO<sub>3</sub>.

The acid tanks are uncontrolled and have a capture hood that operates at a 98% capture efficiency according to Industrial Ventilation, A Manual of Recommended Practices. The associated emission that are not captured by the hood are considered fugitive emissions. The building retains a portion of the fugitive emission before the emissions escape out of the building. The building has a capture efficiency of 50% according to TCEQ Guidance Package – “Chromium Plating and Anodizing Operation Using Chromic Acid Guidance”. The tanks will operate a total of 80 hours a week. When the tanks are not in operation, the tanks will be covered.

**Unit HTR-1 – Paint Booth Heater**

The heater emissions are based on AP-42 Table 1.5-1: Emission Factors for LPG Combustion. The heater has a heat input of 1.36 MMBtu/hr with an annual operation time of 8760 hours a year.

**AerSale Component Solution**  
**Facility Emission Summary**

Uncontrolled Emissions																		
Emission Unit	Description	Stack	PM <sub>10</sub>		PM <sub>2.5</sub>		VOC		HAP		TAP		NOx		CO		SO <sub>2</sub>	
			lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
PAINT-1	Paint Booth 1	Bldg-D1 & Bldg-D2	3.14	0.102	5.87	0.17	14.23	0.35	7.66	0.11	7.90	0.17	-	-	-	-	-	-
PAINT-3	Paint Booth 3	Bldg-D3	-	-	0.019	7.33E-05	7.23	0.029	0.69	2.71E-03	2.18	8.60E-03	-	-	-	-	-	-
TANK-22	Chromium Tank Emissions	Bldg-B	5.00E-03	0.010	5.00E-03	0.010	-	-	-	-	2.38E-03	4.95E-03	-	-	-	-	-	-
FUG-22	Chromium Tank Fugitives	N/A	5.10E-05	1.06E-04	5.10E-05	1.06E-04	-	-	-	-	2.43E-05	5.05E-05	-	-	-	-	-	-
TANK-27	Chromium Tank Emissions	Bldg-B	4.41E-03	9.17E-03	4.41E-03	9.17E-03	-	-	-	-	2.10E-03	4.37E-03	-	-	-	-	-	-
FUG-27	Chromium Tank Fugitives	N/A	4.50E-05	9.36E-05	4.50E-05	9.36E-05	-	-	-	-	2.14E-05	4.46E-05	-	-	-	-	-	-
TANK-15	Nickel Tank Emissions	Bldg-B	0.099	0.21	0.099	0.21	-	-	-	-	0.048	0.099	-	-	-	-	-	-
FUG-15	Nickel Tank Fugitives	N/A	1.01E-03	2.11E-03	1.01E-03	2.11E-03	-	-	-	-	4.86E-04	1.01E-03	-	-	-	-	-	-
TANK-7	Cadmium Tank Emissions	Bldg-B	7.56E-03	0.016	7.56E-03	0.016	-	-	-	-	3.63E-03	7.55E-03	-	-	-	-	-	-
FUG-7	Cadmium Tank Fugitives	N/A	7.71E-05	1.60E-04	7.71E-05	1.60E-04	-	-	-	-	3.70E-05	7.70E-05	-	-	-	-	-	-
TANK-10	Cadmium Tank Emissions	Bldg-B	6.30E-03	0.013	6.30E-03	0.013	-	-	-	-	3.02E-03	6.29E-03	-	-	-	-	-	-
FUG-10	Cadmium Tank Fugitives	N/A	6.43E-05	1.34E-04	6.43E-05	1.34E-04	-	-	-	-	3.09E-05	6.42E-05	-	-	-	-	-	-
TANK-13	HCl Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	6.89E-04	1.43E-03	-	-	-	-	-	-	-	-
FUG-13	HCl Acid Tank Fugitives	N/A	-	-	-	-	-	-	7.03E-06	1.46E-05	-	-	-	-	-	-	-	-
TANK-20	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	9.04E-03	0.019	-	-	-	-	-	-
FUG-20	Nitric Acid Tank Fugitives	N/A	-	-	-	-	-	-	-	-	9.22E-05	1.92E-04	-	-	-	-	-	-
TANK-24	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	0.012	0.024	-	-	-	-	-	-
FUG-24	Nitric Acid Tank Fugitives	N/A	-	-	-	-	-	-	-	-	1.19E-04	2.48E-04	-	-	-	-	-	-
HTR-1	Paint Booth Heater	Bldg-D1 & Bldg-D2	0.010	0.044	0.010	0.044	0.014	0.063	-	-	-	-	0.19	0.82	0.11	0.48	-	-
<b>Total</b>			<b>3.27</b>	<b>0.40</b>	<b>6.03</b>	<b>0.47</b>	<b>21.47</b>	<b>0.44</b>	<b>8.35</b>	<b>0.11</b>	<b>10.16</b>	<b>0.34</b>	<b>0.19</b>	<b>0.82</b>	<b>0.11</b>	<b>0.48</b>	-	-

Controlled Emissions																		
Emission Unit	Description	Stack	PM <sub>10</sub>		PM <sub>2.5</sub>		VOC		HAP		TAP		NOx		CO		SO <sub>2</sub>	
			lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
PAINT-1	Paint Booth 1	Bldg-D1 & Bldg-D2	0.014	4.68E-04	0.027	7.79E-04	11.27	0.35	3.54	0.11	5.94	0.14	-	-	-	-	-	-
PAINT-3	Paint Booth 3	Bldg-D3	-	-	8.55E-05	3.37E-07	7.23	0.029	0.69	2.71E-03	2.18	8.60E-03	-	-	-	-	-	-
TANK-22	Chromium Tank Emissions	Bldg-B	5.00E-03	0.010	5.00E-03	0.010	-	-	-	-	2.38E-03	4.95E-03	-	-	-	-	-	-
FUG-22	Chromium Tank Fugitives	N/A	5.10E-05	1.06E-04	5.10E-05	1.06E-04	-	-	-	-	2.43E-05	5.05E-05	-	-	-	-	-	-
TANK-27	Chromium Tank Emissions	Bldg-B	4.41E-03	9.17E-03	4.41E-03	9.17E-03	-	-	-	-	2.10E-03	4.37E-03	-	-	-	-	-	-
FUG-27	Chromium Tank Fugitives	N/A	4.50E-05	9.36E-05	4.50E-05	9.36E-05	-	-	-	-	2.14E-05	4.46E-05	-	-	-	-	-	-
TANK-15	Nickel Tank Emissions	Bldg-B	0.099	0.21	0.099	0.21	-	-	-	-	0.048	0.099	-	-	-	-	-	-
FUG-15	Nickel Tank Fugitives	N/A	1.01E-03	2.11E-03	1.01E-03	2.11E-03	-	-	-	-	4.86E-04	1.01E-03	-	-	-	-	-	-
TANK-7	Cadmium Tank Emissions	Bldg-B	2.75E-06	5.72E-06	2.75E-06	5.72E-06	-	-	-	-	1.27E-06	2.64E-06	-	-	-	-	-	-
FUG-7	Cadmium Tank Fugitives	N/A	7.71E-05	1.60E-04	7.71E-05	1.60E-04	-	-	-	-	3.70E-05	7.70E-05	-	-	-	-	-	-
TANK-10	Cadmium Tank Emissions	Bldg-B	2.34E-06	4.77E-06	2.34E-06	4.77E-06	-	-	-	-	1.08E-06	2.20E-06	-	-	-	-	-	-
FUG-10	Cadmium Tank Fugitives	N/A	6.43E-05	1.34E-04	6.43E-05	1.34E-04	-	-	-	-	3.09E-05	6.42E-05	-	-	-	-	-	-
TANK-13	HCl Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	6.89E-04	1.43E-03	-	-	-	-	-	-	-	-
FUG-13	HCl Acid Tank Fugitives	N/A	-	-	-	-	-	-	7.03E-06	1.46E-05	-	-	-	-	-	-	-	-
TANK-20	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	9.04E-03	0.019	-	-	-	-	-	-
FUG-20	Nitric Acid Tank Fugitives	N/A	-	-	-	-	-	-	-	-	9.22E-05	1.92E-04	-	-	-	-	-	-
TANK-24	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	0.012	0.024	-	-	-	-	-	-
FUG-24	Nitric Acid Tank Fugitives	N/A	-	-	-	-	-	-	-	-	1.19E-04	2.48E-04	-	-	-	-	-	-
HTR-1	Paint Booth Heater	Bldg-D1 & Bldg-D2	0.010	0.044	0.010	0.044	0.014	0.063	-	-	-	-	0.19	0.82	0.11	0.48	-	-
<b>Total</b>			<b>0.13</b>	<b>0.27</b>	<b>0.15</b>	<b>0.27</b>	<b>18.52</b>	<b>0.44</b>	<b>4.22</b>	<b>0.11</b>	<b>8.19</b>	<b>0.30</b>	<b>0.19</b>	<b>0.82</b>	<b>0.11</b>	<b>0.48</b>	-	-

AerSale Component Solution

HAP Emission Summary

Hazardous Air Pollutants (HAP)														
Emission Unit	Description	Stack	Xylene		Calcium Chromate		Ethylbenzene		Strontium Chromate		Toluene		Barium Chromate	
			lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
PAINT-1	Paint Booth 1	Bldg-D1 & Bldg-D2	1.67	0.069	0.53	0.024	2.76	0.013	2.93	0.024	0.40	1.36E-03	0.15	5.12E-04
PAINT-3	Paint Booth 3	Bldg-D3	0.40	1.59E-03	-	-	-	-	-	-	-	-	-	-
Tank-22	Chromium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-22	Chromium Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-	-	-
Tank-27	Chromium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-27	Chromium Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-	-	-
Tank-15	Nickel Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-15	Nickel Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-	-	-
Tank-7	Cadmium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-7	Cadmium Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-	-	-
Tank-10	Cadmium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
Fug-10	Cadmium Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-	-	-
Tank-13	HCl Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-13	HCl Acid Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-	-	-
Tank-20	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-20	Nitric Acid Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-	-	-
Tank-24	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-24	Nitric Acid Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-	-	-
HTR-1	Paint Booth Heater	Bldg-D1 & Bldg-D2	-	-	-	-	-	-	-	-	-	-	-	-
Total (of any Single HAP)			2.07	0.07	0.53	0.024	2.76	0.013	2.93	0.024	0.40	1.36E-03	0.15	5.12E-04

Hazardous Air Pollutants (HAP)												
Emission Unit	Description	Stack	Naphthalene		Phthalic Anhydride		Methyl Ethyl Ketone		4-Methylpentan-2-one		Hexamethylene	
			lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
PAINT-1	Paint Booth 1	Bldg-D1 & Bldg-D2	-	-	-	-	0.69	9.91E-04	1.97	0.01	3.94	7.50E-03
PAINT-3	Paint Booth 3	Bldg-D3	0.20	7.96E-04	0.081	3.19E-04	-	-	-	-	-	-
Tank-22	Chromium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-
FUG-22	Chromium Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-
Tank-27	Chromium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-
FUG-27	Chromium Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-
Tank-15	Nickel Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-
FUG-15	Nickel Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-
Tank-7	Cadmium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-
FUG-7	Cadmium Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-
Tank-10	Cadmium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-
Fug-10	Cadmium Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-
Tank-13	HCl Acid Tank Emissions	Bldg-B	-	-	6.89E-04	1.43E-03	-	-	-	-	-	-
FUG-13	HCl Acid Tank Fugitives	N/A	-	-	7.03E-06	1.46E-05	-	-	-	-	-	-
Tank-20	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-
FUG-20	Nitric Acid Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-
Tank-24	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-
FUG-24	Nitric Acid Tank Fugitives	N/A	-	-	-	-	-	-	-	-	-	-
HTR-1	Paint Booth Heater	Bldg-D1 & Bldg-D2	-	-	-	-	-	-	-	-	-	-
Total (of any Single HAP)			0.20	7.96E-04	0.081	1.77E-03	0.69	9.91E-04	1.97	0.014	3.94	7.50E-03

AerSale Component Solution

TAP Emission Summary

Toxic Air Pollutants (TAP)														
Paint No.	Description	Stack	n-Butyl Acetate		Anitmony <sup>1</sup>		Nickel <sup>1</sup>		Methyl Amyl Ketone		Cyclohexanone		Heptan-2-one	
			lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
PAINT-1	Paint Booth 1	Bldg-D1 & Bldg-D2	5.79	0.14	4.85E-03	1.10E-04	1.17E-03	2.65E-05	4.81	6.94E-03	0.84	9.24E-04	2.64	0.085
PAINT-3	Paint Booth 3	Bldg-D3	-	-	-	-	-	-	-	-	-	-	-	-
Tank-22	Chromium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-27	Chromium Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-22	Chromium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-27	Chromium Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-15	Nickel Tank Emissions	Bldg-B	-	-	-	-	0.048	0.099	-	-	0.048	0.099	-	-
FUG-15	Nickel Tank Fugitives	N/A (FUG)	-	-	-	-	4.86E-04	1.01E-03	-	-	4.86E-04	1.01E-03	-	-
Tank-7	Cadmium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-7	Cadmium Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-10	Cadmium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
Fug-10	Cadmium Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-13	HCl Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-13	HCl Acid Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-20	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-20	Nitric Acid Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-24	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-24	Nitric Acid Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
HTR-1	Paint Booth Heater	Bldg-D1 & Bldg-D2	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>			<b>5.79</b>	<b>0.14</b>	<b>4.85E-03</b>	<b>1.10E-04</b>	<b>0.049</b>	<b>0.10</b>	<b>4.81</b>	<b>6.94E-03</b>	<b>0.89</b>	<b>0.10</b>	<b>2.64</b>	<b>0.085</b>
Total Stack for Bldg-D1 & Bldg-D2			5.792	0.139	0.00	0.000	0.00	0.00	4.81	0.01	0.842	9.24E-04	2.64	0.085
Total FUG			0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.86E-04	1.01E-03	0.00E+00	0.00E+00	4.86E-04	1.01E-03	0.00E+00	0.00E+00
Total Stack for Bldg-B			0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.76E-02	9.91E-02	0.00E+00	0.00E+00	0.048	0.099	0.00E+00	0.00E+00
Pound per Hour Emission Limits (NMAC)			43.3	lb/hr	0.0333	lb/hr	0.0667	lb/hr	15.7	lb/hr	6.67	lb/hr	15.7	lb/hr
NM Toxics Modeling Required?			No		No		No		No		No		No	
NMAC Occupational Exposure Limit (OEL)			710	mg/m <sup>3</sup>	0.500	mg/m <sup>3</sup>	1.00	mg/m <sup>3</sup>	235	mg/m <sup>3</sup>	100.00	mg/m <sup>3</sup>	235	mg/m <sup>3</sup>
1% OEL			7100	µg/m <sup>3</sup>	5.00	µg/m <sup>3</sup>	10.0	µg/m <sup>3</sup>	2350	µg/m <sup>3</sup>	1000	µg/m <sup>3</sup>	2350	µg/m <sup>3</sup>

<sup>1</sup>Nickel Metal, Carbon Black, and Aluminum Metal are particulate emissions. The paint booths have particulate paint filters; therefore a 99.54% control is applied to emissions associated with the paint booths

## AerSale Component Solution

## TAP Emission Summary

Toxic Air Pollutants (TAP)														
Paint No.	Description	Stack	Solvent Naptha		Carbon Black <sup>1</sup>		Ethyl Acetate		2-Butoxyethanol		4-hydroxy-4-methylpentan-2-one		Aluminum Metal <sup>1</sup>	
			lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
PAINT-1	Paint Booth 1	Bldg-D1 & Bldg-D2	1.34	4.84E-03	2.08E-03	7.49E-07	1.29	6.86E-04	-	-	-	-	0.011	1.60E-05
PAINT-3	Paint Booth 3	Bldg-D3	0.57	2.23E-03	-	-	-	-	0.81	3.19E-03	0.81	3.19E-03	-	-
Tank-22	Chromium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-22	Chromium Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-27	Chromium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-27	Chromium Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-15	Nickel Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-15	Nickel Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-7	Cadmium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-7	Cadmium Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-10	Cadmium Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
Fug-10	Cadmium Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-13	HCl Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-13	HCl Acid Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-20	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-20	Nitric Acid Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
Tank-24	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-	-	-
FUG-24	Nitric Acid Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-	-	-
HTR-1	Paint Booth Heater	Bldg-D1 & Bldg-D2	-	-	-	-	-	-	-	-	-	-	-	-
Total			1.90	7.07E-03	2.08E-03	7.49E-07	1.29	6.86E-04	0.81	3.19E-03	0.81	3.19E-03	0.011	1.60E-05
Total Stack for Bldg-D1 & Bldg-D2			1.34	4.84E-03	0.002	0.000	1.29	6.86E-04	0.81	3.19E-03	0.81	3.19E-03	0.011	1.60E-05
Total FUG			0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	-	-	-	-	-	-	-
Total Stack for Bldg-B			0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	-	-	-	-	-	-	-
Pound per Hour Emission Limits (NMAC)			90.0	lb/hr	0.233	lb/hr	93.3	lb/hr	8.00	lb/hr	16.0	lb/hr	0.667	lb/hr
NM Toxics Modeling Required?			No		No		No		No		No		No	
NMAC Occupational Exposure Limit (OEL)			1350	mg/m <sup>3</sup>	3.50	mg/m <sup>3</sup>	1400	mg/m <sup>3</sup>	120	mg/m <sup>3</sup>	240	mg/m <sup>3</sup>	10.0	mg/m <sup>3</sup>
1% OEL			13500	ua/m <sup>3</sup>	35.0	ua/m <sup>3</sup>	14000	ua/m <sup>3</sup>	1200	ua/m <sup>3</sup>	2400	ua/m <sup>3</sup>	100	ua/m <sup>3</sup>

<sup>1</sup> Nickel Metal, Carbon Black, and Aluminum Metal are particulate emissions. The paint booths have particulate paint filters; therefore a 99.54% control is applied to emissions associated with the paint booths

AerSale Component Solution

TAP Emission Summary

Paint No.	Description	Stack	Toxic Air Pollutants (TAP)									
			Cadmium Metal		Chromium Metal		Nitric Acid		Pentan-2-one		Isopropyl Alcohol	
			lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
PAINT-1	Paint Booth 1	Bldg-D1 & Bldg-D2	-	-	-	-	-	-	0.20	7.26E-05	1.38	1.87E-03
PAINT-3	Paint Booth 3	Bldg-D3	-	-	-	-	-	-	-	-	-	-
Tank-22	Chromium Tank Emissions	Bldg-B	-	-	2.38E-03	4.95E-03	-	-	-	-	-	-
FUG-22	Chromium Tank Fugitives	N/A (FUG)	-	-	2.43E-05	5.05E-05	-	-	-	-	-	-
Tank-27	Chromium Tank Emissions	Bldg-B	-	-	2.10E-03	4.37E-03	-	-	-	-	-	-
FUG-27	Chromium Tank Fugitives	N/A (FUG)	-	-	2.14E-05	4.46E-05	-	-	-	-	-	-
Tank-15	Nickel Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-
FUG-15	Nickel Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-
Tank-7	Cadmium Tank Emissions	Bldg-B	1.27E-06	2.64E-06	-	-	-	-	-	-	-	-
FUG-7	Cadmium Tank Fugitives	N/A (FUG)	3.70E-05	7.70E-05	-	-	-	-	-	-	-	-
Tank-10	Cadmium Tank Emissions	Bldg-B	1.08E-06	2.20E-06	-	-	-	-	-	-	-	-
Fug-10	Cadmium Tank Fugitives	N/A (FUG)	3.09E-05	6.42E-05	-	-	-	-	-	-	-	-
Tank-13	HCl Acid Tank Emissions	Bldg-B	-	-	-	-	-	-	-	-	-	-
FUG-13	HCl Acid Tank Fugitives	N/A (FUG)	-	-	-	-	-	-	-	-	-	-
Tank-20	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	9.04E-03	0.019	-	-	-	-
FUG-20	Nitric Acid Tank Fugitives	N/A (FUG)	-	-	-	-	9.22E-05	1.92E-04	-	-	-	-
Tank-24	Nitric Acid Tank Emissions	Bldg-B	-	-	-	-	0.012	0.024	-	-	-	-
FUG-24	Nitric Acid Tank Fugitives	N/A (FUG)	-	-	-	-	1.19E-04	2.48E-04	-	-	-	-
HTR-1	Paint Booth Heater	Bldg-D1 & Bldg-D2	-	-	-	-	-	-	-	-	-	-
<b>Total</b>			<b>7.02E-05</b>	<b>1.46E-04</b>	<b>4.53E-03</b>	<b>9.41E-03</b>	<b>0.021</b>	<b>0.044</b>	<b>0.20</b>	<b>7.26E-05</b>	<b>1.38</b>	<b>1.87E-03</b>
Total Stack for Bldg-D1 & Bldg-D2			-	-	-	-	-	-	0.20	7.26E-05	1.38	1.87E-03
Total FUG			6.79E-05	1.41E-04	4.57E-05	9.51E-05	2.11E-04	4.40E-04	-	-	-	-
Total Stack for Bldg-B			2.35E-06	4.84E-06	4.48E-03	9.32E-03	0.021	0.043	-	-	-	-
Pound per Hour Emission Limits (NMAC)			0.00333	lb/hr	0.0333	lb/hr	0.333	lb/hr	46.7	lb/hr	65.3	lb/hr
NM Toxics Modeling Required?			No		No		No		No		No	
NMAC Occupational Exposure Limit (OEL)			0.0500	mg/m <sup>4</sup>	0.500	mg/m <sup>5</sup>	5.00	mg/m <sup>6</sup>	700	mg/m <sup>6</sup>	980	mg/m <sup>6</sup>
1% OEL			0.500	µg/m <sup>4</sup>	5.00	µg/m <sup>5</sup>	50.0	µg/m <sup>6</sup>	7000	µg/m <sup>6</sup>	9800	µg/m <sup>6</sup>

<sup>1</sup>Nickel Metal, Carbon Black, and Aluminum Metal are particulate emissions. The paint booths have particulate paint filters; therefore a 99.54% control is applied to emissions associated with the paint booths

Unit Number	Description	Uncontrolled															
		PM <sub>10</sub> /PM <sub>2.5</sub>		Chromium Compounds		Nickel Compounds		Cadmium Compounds		Hydrochloric Acid		Nitric Acid		HAP		TAP	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Tank-22	Chromium Tank Emissions	5.00E-03	1.04E-02	2.38E-03	4.95E-03	-	-	-	-	-	-	-	-	-	-	2.38E-03	4.95E-03
FUG-22	Chromium Tank Fugitives	5.10E-05	1.06E-04	2.43E-05	5.05E-05	-	-	-	-	-	-	-	-	-	-	2.43E-05	5.05E-05
Tank-27	Chromium Tank Emissions	4.41E-03	9.17E-03	2.10E-03	4.37E-03	-	-	-	-	-	-	-	-	-	-	2.10E-03	4.37E-03
FUG-27	Chromium Tank Fugitives	4.50E-05	9.36E-05	2.14E-05	4.46E-05	-	-	-	-	-	-	-	-	-	-	2.14E-05	4.46E-05
Tank-15	Nickel Tank Emissions	0.099	0.206	-	-	0.048	0.099	-	-	-	-	-	-	-	-	0.048	0.099
FUG-15	Nickel Tank Fugitives	1.01E-03	2.11E-03	-	-	4.86E-04	1.01E-03	-	-	-	-	-	-	-	-	4.86E-04	1.01E-03
Tank-7	Cadmium Tank Emissions	7.56E-03	0.016	-	-	-	-	3.63E-03	7.55E-03	-	-	-	-	-	-	3.63E-03	7.55E-03
FUG-7	Cadmium Tank Fugitives	7.71E-05	1.60E-04	-	-	-	-	3.70E-05	7.70E-05	-	-	-	-	-	-	3.70E-05	7.70E-05
Tank-10	Cadmium Tank Emissions	6.30E-03	0.013	-	-	-	-	3.02E-03	6.29E-03	-	-	-	-	-	-	3.02E-03	6.29E-03
FUG-10	Cadmium Tank Fugitives	6.43E-05	1.34E-04	-	-	-	-	3.09E-05	6.42E-05	-	-	-	-	-	-	3.09E-05	6.42E-05
Tank-13	HCl Acid Tank Emissions	-	-	-	-	-	-	-	-	6.89E-04	1.43E-03	-	-	6.89E-04	1.43E-03	-	-
FUG-13	HCl Acid Tank Fugitives	-	-	-	-	-	-	-	-	7.03E-06	1.46E-05	-	-	7.03E-06	1.46E-05	-	-
Tank-20	Nitric Acid Tank Emissions	-	-	-	-	-	-	-	-	-	-	9.04E-03	1.88E-02	-	-	9.04E-03	1.88E-02
FUG-20	Nitric Acid Tank Fugitives	-	-	-	-	-	-	-	-	-	-	9.22E-05	1.92E-04	-	-	9.22E-05	1.92E-04
Tank-24	Nitric Acid Tank Emissions	-	-	-	-	-	-	-	-	1.17E-02	2.43E-02	-	-	-	-	1.17E-02	2.43E-02
FUG-24	Nitric Acid Tank Fugitives	-	-	-	-	-	-	-	-	-	-	1.19E-04	2.48E-04	-	-	1.19E-04	2.48E-04
	Total	0.12	0.26	4.53E-03	9.41E-03	0.048	0.10	6.72E-03	0.014	6.96E-04	1.45E-03	2.09E-02	4.35E-02	6.96E-04	1.45E-03	0.080	0.17

Unit Number	Description	Controlled															
		PM <sub>10</sub> /PM <sub>2.5</sub>		Chromium Compounds		Nickel Compounds		Cadmium Compounds		Hydrochloric Acid		Nitric Acid		HAP		TAP	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)		
<sup>1</sup> Tank-22	Chromium Tank Emissions	5.00E-03	1.04E-02	2.38E-03	4.95E-03	-	-	-	-	-	-	-	-	-	-	2.38E-03	4.95E-03
FUG-22	Chromium Tank Fugitives	5.10E-05	1.06E-04	2.43E-05	5.05E-05	-	-	-	-	-	-	-	-	-	-	2.43E-05	5.05E-05
<sup>1</sup> Tank-27	Chromium Tank Emissions	4.41E-03	9.17E-03	2.10E-03	4.37E-03	-	-	-	-	-	-	-	-	-	-	2.10E-03	4.37E-03
FUG-27	Chromium Tank Fugitives	4.50E-05	9.36E-05	2.14E-05	4.46E-05	-	-	-	-	-	-	-	-	-	-	2.14E-05	4.46E-05
<sup>1,2</sup> Tank-15	Nickel Tank Emissions	0.099	0.21	-	-	4.76E-02	9.91E-02	-	-	-	-	-	-	-	-	4.76E-02	9.91E-02
FUG-15	Nickel Tank Fugitives	1.01E-03	2.11E-03	-	-	4.86E-04	1.01E-03	-	-	-	-	-	-	-	-	4.86E-04	1.01E-03
<sup>1</sup> Tank-7	Cadmium Tank Emissions	2.75E-06	5.72E-06	-	-	-	-	1.27E-06	2.64E-06	-	-	-	-	-	-	1.27E-06	2.64E-06
FUG-7	Cadmium Tank Fugitives	7.71E-05	1.60E-04	-	-	-	-	3.70E-05	7.70E-05	-	-	-	-	-	-	3.70E-05	7.70E-05
<sup>1</sup> Tank-10	Cadmium Tank Emissions	2.34E-06	4.77E-06	-	-	-	-	1.08E-06	2.20E-06	-	-	-	-	-	-	1.08E-06	2.20E-06
FUG-10	Cadmium Tank Fugitives	6.43E-05	1.34E-04	-	-	-	-	3.09E-05	6.42E-05	-	-	-	-	-	-	3.09E-05	6.42E-05
Tank-13	HCl Acid Tank Emissions	-	-	-	-	-	-	-	-	6.89E-04	1.43E-03	-	-	6.89E-04	1.43E-03	-	-
FUG-13	HCl Acid Tank Fugitives	-	-	-	-	-	-	-	-	7.03E-06	1.46E-05	-	-	7.03E-06	1.46E-05	-	-
Tank-20	Nitric Acid Tank Emissions	-	-	-	-	-	-	-	-	-	-	9.04E-03	1.88E-02	-	-	9.04E-03	1.88E-02
FUG-20	Nitric Acid Tank Fugitives	-	-	-	-	-	-	-	-	-	-	9.22E-05	1.92E-04	-	-	9.22E-05	1.92E-04
Tank-24	Nitric Acid Tank Emissions	-	-	-	-	-	-	-	-	-	-	1.17E-02	2.43E-02	-	-	1.17E-02	2.43E-02
FUG-24	Nitric Acid Tank Fugitives	-	-	-	-	-	-	-	-	-	-	1.19E-04	2.48E-04	-	-	1.19E-04	2.48E-04
Total		0.11	0.23	4.53E-03	9.41E-03	0.048	0.10	7.02E-05	1.46E-04	6.96E-04	1.45E-03	2.09E-02	4.35E-02	6.96E-04	1.45E-03	0.074	0.15

<sup>1</sup>Tank emissions are captured by a hood (with a 98% capture efficiency) and then controlled by a mesh-pad mist eliminator.

<sup>2</sup>No emission factors were provided in the TCEQ Guidance regarding Nickel electroplating with a mesh-pad mist eliminator; therefore, controlled emissions are represented as the same as uncontrolled emissions as a conservative estimation.

**AerSale Component Solution**
**Metal Plating Operations - Chemfilm Tank (Tank 22)**
**Emission Calculation Basis: TCEQ Calculations Guidance Package - Chromium Plating & Anodizing Operations Using Chromic Acid (10/2007)**

Chromium Plating Tanks	Tank 22
<b>Uncontrolled Emissions</b>	
<sup>1</sup> Uncontrolled Total PM Emission Factor (grains/hr-ft <sup>2</sup> )	4.2
<sup>2</sup> Uncontrolled Chromium Compounds Emission Factor (PM grains/hr- ft <sup>2</sup> )	2.0
Anodizing Tank Surface Area (ft <sup>2</sup> )	8.5
<sup>3</sup> Uncontrolled Total PM Emission Rate (lb/hr)	5.10E-03
<sup>4</sup> Uncontrolled Chromium Compounds Emission Rate (lb/hr)	2.43E-03
<sup>5</sup> CE = Hood Capture Efficiency (%)	98%
<sup>6</sup> Total PM Emissions Captured by the Hood (lb/hr)	5.00E-03
<sup>7</sup> Total Chromium Compounds Captured by the Hood	2.38E-03
<sup>8</sup> Building Capture Efficiency	50%
<sup>9</sup> Uncaptured Fugitive Total PM Emissions Rate (lb/hr)	5.10E-05
<sup>10</sup> Uncaptured Fugitive Chromium Compound Emission Rate (lb/hr)	2.43E-05
<sup>11</sup> Total Operating Hours per week	80
Total Operating Hours Per Year	4,160
Uncaptured Annual Total PM Fugitive Emission Rate (tons/year)	1.06E-04
Uncaptured Annual Total Chromium Compounds Fugitive Emission Rate (tons/year)	5.05E-05
Captured Annual Total PM Emission Rate (tons/yr)	1.04E-02
Captured Annual Chromium Compounds Emission Rate (tons/yr)	4.95E-03
<b>Controlled Emissions</b>	
<sup>1</sup> Controlled Total PM Emission Factor (grains/hr-ft <sup>2</sup> )	4.2
<sup>2</sup> Controlled Chromium Compounds Emission Factor (grains/hr-ft <sup>2</sup> )	2.00E+00
<sup>12</sup> Type of Control	Ventilated
Anodizing Tank Surface Area (ft <sup>2</sup> )	8.5
<sup>3</sup> Controlled Total PM Emission Rate (lb/hr)	5.10E-03
<sup>4</sup> Controlled Chromium Compounds Emission Rate (lb/hr)	2.43E-03
<sup>5</sup> CE = Hood Capture Efficiency (%)	98%
<sup>6</sup> Total PM Emissions Captured by the Hood(lb/hr)	5.00E-03
<sup>7</sup> Total Chromium Compounds Captured by the Hood (lb/hr)	2.38E-03
<sup>11</sup> Total Operating Hours per week	80
Total Operating Hours Per Year	4,160
Annual Controlled PM Emission Rate (tons/yr)	1.04E-02
Annual Controlled Chromium Compounds Emission Rate (tons/yr)	4.95E-03

<sup>1</sup>TCEQ Chromium Plating and Anodizing Operations Using Chromic Acid Guidance: Table 12.20-2: Emission Factors for Chromate Acid Anodizing

<sup>2</sup>TCEQ Chromium Plating and Anodizing Operations Using Chromic Acid Guidance: Table 12.20-2 Emission Factors for Chromate Acid Anodizing

<sup>3</sup>Emission Rate of Total PM (lb/hr) = Emission Factor Total PM (grains/hr-ft<sup>2</sup>) \* Anodizing Tank Surface Area (ft<sup>2</sup>) ÷ 7000 (grains/lb)

<sup>4</sup>Emission Rate of Hard Chromium Compound (lb/hr) = Emission Factor Hard Chromium Compound (grains/hr-ft<sup>2</sup>) \* Anodizing Tank Surface Area (ft<sup>2</sup>) ÷ 7000 (grains/lb)

<sup>5</sup>Industrial Ventilation, A Manual of Recommended Practices can be considered to have 98% capture efficiency

<sup>6</sup>Total PM Emissions Captured by the Hood (lb/hr) = Uncontrolled Emission Rate PM Total (lb/hr) \* Hood Capture Efficiency (%)

<sup>7</sup>Total Chromium Compounds Captured by the Hood (lb/hr) = Uncontrolled Emission Rate Chromium Compounds (lb/hr) \* Hood Capture Efficiency

<sup>8</sup>TCEQ Chromium Plating and Anodizing Operations Using Chromic Acid Guidance: Building has a capture efficiency of 50%

<sup>9</sup>Uncaptured Fugitive Total PM Emission Rate (lb/hr) = Uncontrolled Total PM Emission Rate (lb/hr) \* [1 - Capture efficiency] \* [1-Building Capture Efficiency]

<sup>10</sup>Uncaptured Fugitive Total Chromium Compounds Emission Rate (lb/hr) = Uncontrolled Total Chromium Compound Emission Rate \* [1 - Capture efficiency] \* [1-Building Capture Efficiency]

<sup>11</sup>The metal plating operations will operate 80 hours a week. When tanks are not in operations the tanks are covered.

<sup>12</sup>The Mesh-Pad Eliminator only controls emission captured by the hood.

The mesh pad filter was removed from this tank.

**\*Chromium Plating Emissions Summary**

Unit Number	Description	Uncontrolled			
		PM <sub>10</sub> /PM <sub>2.5</sub>		Chromium Compounds	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)
TANK-22	Chromium Tank Emissions	5.00E-03	1.04E-02	2.38E-03	4.95E-03
FUG-22	Chromium Tank Fugitives	5.10E-05	1.06E-04	2.43E-05	5.05E-05

Unit Number	Description	Controlled			
		PM <sub>10</sub> /PM <sub>2.5</sub>		Chromium Compounds	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)
TANK-22	Chromium Tank Emissions	5.00E-03	1.04E-02	2.38E-03	4.95E-03
FUG-22	Chromium Tank Fugitives	5.10E-05	1.06E-04	2.43E-05	5.05E-05

<sup>9</sup>98% of tank emissions are captured by a hood. The uncaptured emissions (2%) are assumed to be fugitive emissions. Of these fugitive emissions, only 50% are released to the atmosphere as it is assumed the other 50% are captured by the building itself. Once the emissions are captured by the hood (non-fugitive emissions), they are controlled by a mesh-pad mist eliminator.

40 CFR N Determination					
Sodium Chromate Anhydrate					
Na <sub>2</sub> CR <sub>2</sub> O <sub>7</sub>					
# of atoms	element	MW	unit	Density	
2	Na	22.99	g/mol	0.97	g/cm <sup>3</sup>
2	Cr	52	g/mol	2.73	g /cm <sup>3</sup>
7	O	16	g/mol	1.43	g/cm <sup>3</sup>
-	Water	-	-	1	g/cm <sup>3</sup>
Total MW		262			
MW % of Chromate in Compound		40%			

\*It was conservatively assumed the chemical is comprised of entirely chromate and mixed with pure water.

Chromate		Water	
10.1	Sodium Chromate Anhydrate per gallon	1	gallon of water
4.01	ounces of Chromate per gallon	3785.412	cm <sup>3</sup> of water
113.67	grams of Chromate per gallon	3785.412	grams of water

3.0%	Weight percentage of Chromate in solution
0.10%	Regulation Cut Off
Yes	Subject to 40 CFR N



# **AerSale Component Solution**

## **Metal Plating Operations - Chromate Tank (Beaker)**

Emission Calculation Basis: TCEQ Calculations Guidance Package - Chromium Plating & Anodizing Operations Using Chromic Acid (10/2007)

Chromium Plating Tanks	Beaker
<b>Uncontrolled Emissions</b>	
<sup>1</sup> Uncontrolled Total PM Emission Factor (grains/hr-ft <sup>2</sup> )	4.2
<sup>2</sup> Uncontrolled Chromium Compounds Emission Factor (PM grains/hr- ft <sup>2</sup> )	2.0
Anodizing Tank Surface Area (ft <sup>2</sup> )	0.197
<sup>3</sup> Uncontrolled Total PM Emission Rate (lb/hr)	1.18E-04
<sup>4</sup> Uncontrolled Chromium Compounds Emission Rate (lb/hr)	5.62E-05
<sup>5</sup> CE = Hood Capture Efficiency (%)	98%
<sup>6</sup> Total PM Emissions Captured by the Hood (lb/hr)	0.0001
<sup>7</sup> Total Chromium Compounds Captured by the Hood	0.0001
<sup>8</sup> Building Capture Efficiency	50%
<sup>9</sup> Uncaptured Fugitive Total PM Emissions Rate (lb/hr)	1.18E-06
<sup>10</sup> Uncaptured Fugitive Chromium Compound Emission Rate (lb/hr)	5.62E-07
<sup>11</sup> Total Operating Hours per week	80
Total Operating Hours Per Year	4,160
Uncaptured Annual Total PM Fugitive Emission Rate (tons/year)	2.45E-06
Uncaptured Annual Total Chromium Compounds Fugitive Emission Rate (tons/year)	1.17E-06
Captured Annual Total PM Emission Rate (tons/yr)	2.40E-04
Captured Annual Chromium Compounds Emission Rate (tons/yr)	1.14E-04
<b>Controlled Emissions</b>	
<sup>1</sup> Controlled Total PM Emission Factor (grains/hr-ft <sup>2</sup> )	0.011
<sup>2</sup> Controlled Chromium Compounds Emission Factor (grains/hr-ft <sup>2</sup> )	5.10E-03
<sup>12</sup> Type of Control	None
Anodizing Tank Surface Area (ft <sup>2</sup> )	0.197
<sup>3</sup> Controlled Total PM Emission Rate (lb/hr)	3.09E-07
<sup>4</sup> Controlled Chromium Compounds Emission Rate (lb/hr)	1.43E-07
<sup>5</sup> CE = Hood Capture Efficiency (%)	98%
<sup>6</sup> Total PM Emissions Captured by the Hood(lb/hr)	3.03E-07
<sup>7</sup> Total Chromium Compounds Captured by the Hood (lb/hr)	1.40E-07
<sup>11</sup> Total Operating Hours per week	80
Total Operating Hours Per Year	4,160
Annual Controlled PM Emission Rate (tons/yr)	6.30E-07
Annual Controlled Chromium Compounds Emission Rate (tons/yr)	2.92E-07

<sup>1</sup>TCEQ Chromium Plating and Anodizing Operations Using Chromic Acid Guidance: Table 12.20-2: Emission Factors for Chromate Acid Anodizing

<sup>2</sup>TCEQ Chromium Plating and Anodizing Operations Using Chromic Acid Guidance: Table 12.20-2 Emission Factors for Chromate Acid Anodizing

<sup>3</sup>Emission Rate of Total PM (lb/hr) = Emission Factor Total PM (grains/hr-ft<sup>2</sup>) \* Anodizing Tank Surface Area (ft<sup>2</sup>) ÷ 7000 (grains/lb)

<sup>4</sup>Emission Rate of Hard Chromium Compound (lb/hr) = Emission Factor Hard Chromium Compound (grains/hr-ft<sup>2</sup>) \* Anodizing Tank Surface Area (ft<sup>2</sup>) ÷ 7000 (grains/lb)

<sup>5</sup>Industrial Ventilation, A Manual of Recommended Practices can be considered to have 98% capture efficiency

<sup>6</sup> Total PM Emissions Captured by the Hood (lb/hr) = Uncontrolled Emission Rate PM Total (lb/hr) \* Hood Capture Efficiency (%)

<sup>7</sup>Total Chromium Compounds Captured by the Hood (lb/hr) = Uncontrolled Emission Rate Chromium Compounds (lb/hr) \* Hood Capture Efficiency

<sup>8</sup>TCEQ Chromium Plating and Anodizing Operations Using Chromic Acid Guidance: Building has a capture efficiency of 50%

<sup>9</sup>Uncaptured Fugitive Total PM Emission Rate (lb/hr) = Uncontrolled Total PM Emission Rate (lb/hr) \* [1 - Capture efficiency] \* [1-Building Capture Efficiency]

<sup>10</sup>Uncaptured Fugitive Total Chromium Compounds Emission Rate (lb/hr) = Uncontrolled Total Chromium Compound Emission Rate \* [1 - Capture efficiency] \* [1-Building Capture Efficiency]

<sup>11</sup>The metal plating operations will operate 80 hours a week. When tanks are not in operations the tanks are covered.

### **\*Chromium Plating Emissions Summary**

Unit Number	Description	Uncontrolled			
		PM <sub>10</sub> /PM <sub>2.5</sub>		Chromium Compounds	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)
TANK-22	Chromium Tank Emissions	1.16E-04	2.40E-04	5.50E-05	1.14E-04
FUG-22	Chromium Tank Fugitives	1.18E-06	2.45E-06	5.62E-07	1.17E-06

Unit Number	Description	Controlled			
		PM <sub>10</sub> /PM <sub>2.5</sub>		Chromium Compounds	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)
TANK-22	Chromium Tank Emissions	3.03E-07	6.30E-07	1.43E-07	2.92E-07
FUG-22	Chromium Tank Fugitives	1.18E-06	2.45E-06	5.62E-07	1.17E-06

\*98% of tank emissions are captured by a hood. The uncaptured emissions (2%) are assumed to be fugitive emissions. Of these fugitive emissions, only 50% are released to the atmosphere as it is assumed the other 50% are captured by the building itself.

40 CFR N Determination					
Sodium Chromate Anhydrate					
Na <sub>2</sub> CR <sub>2</sub> O <sub>7</sub>					
# of atoms	element	MW	unit	Density	
2	Na	22.99	g/mol	0.97	g/cm^3
2	Cr	52	g/mol	2.73	g /cm^3
7	O	16	g/mol	1.43	g/cm^3
-	Water	-	-	1	g/cm^3
Total MW		262			
MW % of Chromate in Compound		40%			

\*It was conservatively assumed the chemical is comprised of entirely chromate and mixed with pure water.

Chromate		Water	
10.1	Sodium Chromate Anhydrate per gallon	1	gallon of water
4.01	ounces of Chromate per gallon	3785.412	cm^3 of water
113.67	grams of Chromate per gallon	3785.412	grams of water

3.0%	Weight percentage of Chromate in solution
0.10%	Regulation Cut Off
Yes	Subject to 40 CFR N

**AerSale Component Solution**
**Metal Plating Operations - Chromate Tank (Tank 27)**
**Emission Calculation Basis: TCEQ Calculations Guidance Package - Chromium Plating & Anodizing Operations Using Chromic Acid (10/2007)**

Chromium Plating Tanks	Tank 27
<b>Uncontrolled Emissions</b>	
<sup>1</sup> Uncontrolled Total PM Emission Factor (grains/hr-ft <sup>2</sup> )	4.2
<sup>2</sup> Uncontrolled Chromium Compounds Emission Factor (PM grains/hr- ft <sup>2</sup> )	2.0
Anodizing Tank Surface Area (ft <sup>2</sup> )	7.5
<sup>3</sup> Uncontrolled Total PM Emission Rate (lb/hr)	4.50E-03
<sup>4</sup> Uncontrolled Chromium Compounds Emission Rate (lb/hr)	2.14E-03
<sup>5</sup> CE = Hood Capture Efficiency (%)	98%
<sup>6</sup> Total PM Emissions Captured by the Hood (lb/hr)	0.0044
<sup>7</sup> Total Chromium Compounds Captured by the Hood	0.0021
<sup>8</sup> Building Capture Efficiency	50%
<sup>9</sup> Uncaptured Fugitive Total PM Emissions Rate (lb/hr)	4.50E-05
<sup>10</sup> Uncaptured Fugitive Chromium Compound Emission Rate (lb/hr)	2.14E-05
<sup>11</sup> Total Operating Hours per week	80
Total Operating Hours Per Year	4,160
Uncaptured Annual Total PM Fugitive Emission Rate (tons/year)	9.36E-05
Uncaptured Annual Total Chromium Compounds Fugitive Emission Rate (tons/year)	4.46E-05
Captured Annual Total PM Emission Rate (tons/yr)	9.17E-03
Captured Annual Chromium Compounds Emission Rate (tons/yr)	4.37E-03
<b>Controlled Emissions</b>	
<sup>1</sup> Controlled Total PM Emission Factor (grains/hr-ft <sup>2</sup> )	4.2
<sup>2</sup> Controlled Chromium Compounds Emission Factor (grains/hr-ft <sup>2</sup> )	2.00E+00
<sup>12</sup> Type of Control	Ventilated
Anodizing Tank Surface Area (ft <sup>2</sup> )	7.5
<sup>3</sup> Controlled Total PM Emission Rate (lb/hr)	4.50E-03
<sup>4</sup> Controlled Chromium Compounds Emission Rate (lb/hr)	2.14E-03
<sup>5</sup> CE = Hood Capture Efficiency (%)	98%
<sup>6</sup> Total PM Emissions Captured by the Hood(lb/hr)	4.41E-03
<sup>7</sup> Total Chromium Compounds Captured by the Hood (lb/hr)	2.10E-03
<sup>11</sup> Total Operating Hours per week	80
Total Operating Hours Per Year	4,160
Annual Controlled PM Emission Rate (tons/yr)	9.17E-03
Annual Controlled Chromium Compounds Emission Rate (tons/yr)	4.37E-03

<sup>1</sup>TCEQ Chromium Plating and Anodizing Operations Using Chromic Acid Guidance: Table 12.20-2: Emission Factors for Chromate Acid Anodizing

<sup>2</sup>TCEQ Chromium Plating and Anodizing Operations Using Chromic Acid Guidance: Table 12.20-2 Emission Factors for Chromate Acid Anodizing

<sup>3</sup>Emission Rate of Total PM (lb/hr) = Emission Factor Total PM (grains/hr-ft<sup>2</sup>) \* Anodizing Tank Surface Area (ft<sup>2</sup>) ÷ 7000 (grains/lb)

<sup>4</sup>Emission Rate of Hard Chromium Compound (lb/hr) = Emission Factor Hard Chromium Compound (grains/hr-ft<sup>2</sup>) \* Anodizing Tank Surface Area (ft<sup>2</sup>) ÷ 7000 (grains/lb)

<sup>5</sup>Industrial Ventilation, A Manual of Recommended Practices can be considered to have 98% capture efficiency

<sup>6</sup>Total PM Emissions Captured by the Hood (lb/hr) = Uncontrolled Emission Rate PM Total (lb/hr) \* Hood Capture Efficiency (%)

<sup>7</sup>Total Chromium Compounds Captured by the Hood (lb/hr) = Uncontrolled Emission Rate Chromium Compounds (lb/hr) \* Hood Capture Efficiency

<sup>8</sup>TCEQ Chromium Plating and Anodizing Operations Using Chromic Acid Guidance: Building has a capture efficiency of 50%

<sup>9</sup>Uncaptured Fugitive Total PM Emission Rate (lb/hr) = Uncontrolled Total PM Emission Rate (lb/hr) \* [1 - Capture efficiency] \* [1-Building Capture Efficiency]

<sup>10</sup>Uncaptured Fugitive Total Chromium Compounds Emission Rate (lb/hr) = Uncontrolled Total Chromium Compound Emission Rate \* [1 - Capture efficiency] \* [1-Building Capture Efficiency]

<sup>11</sup>The metal plating operations will operate 80 hours a week. When tanks are not in operations the tanks are covered.

<sup>12</sup>The Mesh-Pad Eliminator only controls emission captured by the hood.

The mesh pad filter was removed from this tank.

**\*Chromium Plating Emissions Summary**

Unit Number	Description	Uncontrolled			
		PM <sub>10</sub> /PM <sub>2.5</sub>		Chromium Compounds	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)
TANK-27	Chromium Tank Emissions	4.41E-03	9.17E-03	2.10E-03	4.37E-03
FUG-27	Chromium Tank Fugitives	4.50E-05	9.36E-05	2.14E-05	4.46E-05

Unit Number	Description	Controlled			
		PM <sub>10</sub> /PM <sub>2.5</sub>		Chromium Compounds	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)
TANK-27	Chromium Tank Emissions	4.41E-03	9.17E-03	2.10E-03	4.37E-03
FUG-27	Chromium Tank Fugitives	4.50E-05	9.36E-05	2.14E-05	4.46E-05

<sup>9</sup>98% of tank emissions are captured by a hood. The uncaptured emissions (2%) are assumed to be fugitive emissions. Of these fugitive emissions, only 50% are released to the atmosphere as it is assumed the other 50% are captured by the building itself. Once the emissions are captured by the hood (non-fugitive emissions), they are controlled by a mesh-pad mist eliminator.

40 CFR N Determination					
Sodium Chromate Anhydrate					
Na <sub>2</sub> CR <sub>2</sub> O <sub>7</sub>					
# of atoms	element	MW	unit	Density	
2	Na	22.99	g/mol	0.97	g/cm^3
2	Cr	52	g/mol	2.73	g /cm^3
7	O	16	g/mol	1.43	g/cm^3
-	Water	-	-	1	g/cm^3
Total MW		262			
MW % of Chromate in Compound		40%			

\*It was conservatively assumed the chemical is compromised of entirely chromate and mixed with pure water.

Chromate		Water	
10.1	Sodium Chromate Anhydrate per gallon	1	gallon of water
4.01	ounces of Chromate per gallon	3785.412	cm^3 of water
113.67	grams of Chromate per gallon	3785.412	grams of water

3.0%	Weight percentage of Chromate in solution
0.10%	Regulation Cut Off
Yes	Subject to 40 CFR N

**AerSale Component Solution**
**Metal Plating - Woods Nickel Strike Tank (Tank 15)**
**Emission Calculation Basis: TCEQ Calculations Guidance Package - Chromium Plating & Anodizing Operations Using Chromic Acid (10/2007)**
**Inputs provided by Aersale Component Solutions (07/02/2019)**

Area of the Tank (in <sup>2</sup> )	1080
*Maximum Amperage per Square Inch	0.50
Total Amperage (amp)	540

Nickel Plating Tanks	Tank 15
<b>Uncontrolled</b>	
<sup>1</sup> Total PM Emission Factor (grains/amp-hr)	0.25
<sup>2</sup> Adjusted Total PM Emission Factor (grains/amp-hr)	1.31
<sup>3</sup> Emission Factor Nickel Compounds (grains/amp-hr)	0.63
Maximum Amperage of Nickel Tank Rectifier (amps)	540
<sup>4</sup> Uncontrolled Total PM Emission Rate (lb/hr)	0.10
<sup>5</sup> Uncontrolled Nickel Compounds Emission Rate (lb/hr)	0.049
<sup>6</sup> CE = Hood Capture Efficiency (%)	98%
<sup>7</sup> Total PM Emissions Captured by the Hood (lb/hr)	0.099
<sup>8</sup> Total Nickel Compounds Captured by the Hood (lb/hr)	0.048
<sup>9</sup> Building Capture Efficiency	50%
<sup>10</sup> Uncaptured Total PM Fugitive Emissions Rate (lb/hr)	1.01E-03
<sup>11</sup> Uncaptured Nickel Compound Fugitive Emission Rate (lb/hr)	4.86E-04
<sup>12</sup> Total Operating Hours per week	80
Total Operating Hours Per Year	4,160
Uncaptured Annual Total PM Fugitive Emission Rate (tons/year)	2.11E-03
Uncaptured Annual Total Nickel Compounds Fugitive Emission Rate (tons/year)	1.01E-03
Captured Annual Total PM Emission Rate (tons/yr)	0.206
Captured Annual Nickel Compounds Emission Rate (tons/yr)	0.099
<b>Controlled</b>	
<sup>13</sup> Type of Control	Ventilated
Mesh pad filters were removed from this tank.	

Adjusted Total PM Emission Factor for Nickel	
0.25	Total PM Emission Factor (grains/amp-hr)
0.63	Emission Factor Nickel Compounds (grains/amp-hr)
0.12	Emission Factor Chromium Compounds (grains/amp-hr)
1.31	Adjusted Total PM Emission Factor (grains/amp-hr)

40 CFR WWWWWW Determination			
Nickel Chloride			
NiCl <sub>2</sub> *6H <sub>2</sub> O			
# of atoms	element	MW	unit
2	Ni	58.69	g/mol
2	Cl	35.45	g/mol
6	O	16	g/mol
12	H	1	g/mol
-	Water	-	-
Total MW		296	

MW % of Nickel in Compound	40%
----------------------------	-----

Nickel	
35	Nickel Chloride per gallon
13.87	ounces of Nickel per gallon
393.10	grams of Nickel per gallon

Water	
1	gallon of water
3785.4	cm <sup>3</sup> of water
3785.4	grams of water

10.4%	Weight percentage of Nickel in solution
0.10%	Regulation Cut Off
Yes	Subject to 40 CFR WWWWWW

<sup>1</sup>TCEQ Chromium Plating & Anodizing Operations Using Chromic Acid Guidance: Table 12.20-1 Emission Factors for Chromium Electroplating

<sup>2</sup>The total emission factor was adjusted based on a ratio of the Nickel and Chromium emission factor;

Adjusted Particulate Matter Emission Factor for Nickel tanks = Emission Factor of Nickel Compounds + Emission Factor of Chromium Compounds

<sup>3</sup>TCEQ Chromium Plating & Anodizing Operations Using Chromic Acid Guidance: Table 12.20-4 Emission Factors for Electroplating-Other Metals

<sup>4</sup>Emission Rate of Total PM (lb/hr) = Emission Factor Total PM (grains/amp-hr) \* Maximum amperage (amp) ÷ 7000 (grains/lb)

<sup>5</sup>Emission Rate of Nickel Compound (lb/hr) = Emission Factor Nickel Compound (grains/hr-amp) \* Maximum Amperage (amp) ÷ 7000 (grains/lb)

<sup>6</sup>Industrial Ventilation, A Manual of Recommended Practices can be considered to have 98% capture efficiency

<sup>7</sup>Total PM Emissions Captured by the Hood (lb/hr) = Uncontrolled Emission Rate PM Total (lb/hr) \* Hood Capture Efficiency (%)

<sup>8</sup>Total Nickel Compounds Captured by the Hood (lb/hr) = Uncontrolled Emission Rate Nickel Compounds (lb/hr) \* Hood Capture Efficiency

<sup>9</sup>TCEQ Chromium Plating and Anodizing Operations Using Chromic Acid Guidance: Building has a capture efficiency of 50%

<sup>10</sup>Uncaptured Fugitive Total PM Emission Rate (lb/hr) = Uncontrolled Total PM Emission Rate (lb/hr) \* [1 - Capture efficiency] \* [1-Building Capture Efficiency]

<sup>11</sup>Uncaptured Fugitive Nickel Compounds Emission Rate (lb/hr) = Uncontrolled Total Nickel Compound Emission Rate \* [1 - Capture efficiency] \* [1-Building Capture Efficiency]

<sup>12</sup>The metal plating operations will operate 80 hours a week. When tanks are not in operations the tanks are covered.

<sup>13</sup>The Mesh-Pad Eliminator only controls emission captured by the hood.

**\*Nickel Plating Emissions Summary**

Unit Number	Description	Uncontrolled			
		PM <sub>10</sub> /PM <sub>2.5</sub>		Nickel Compounds	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)
TANK-15	Nickel Tank Emissions	0.099	0.206	0.048	0.099
FUG-15	Nickel Tank Fugitives	1.01E-03	2.11E-03	4.86E-04	1.01E-03

\*98% of tank emissions are captured by a hood. The uncaptured emissions (2%) are assumed to be fugitive emissions. Of these fugitive emissions, only 50% are released to the atmosphere as it is assumed the other 50% are captured by the building itself. Once the emissions are captured by the hood (non-fugitive emissions), they are controlled by a mesh-pad mist eliminator.

**AerSale Component Solution**  
**Metal Plating - LHE Cadmium Tank & Bright Cadmium Tank**

Emission Calculation Basis: TCEQ Calculations Guidance Package - Chromium Plating & Anodizing Operations Using Chromic Acid (10/2007)

**Inputs provided by Aersale Component Solutions (07/02/2019)**

Area of LHE Cadmium Tank 7 (in <sup>2</sup> )	1296
Area of Bright Cadmium Tank 10 (in <sup>2</sup> )	1080
*Maximum Amperage per Square Inch	0.5
Total Amperage of LHE Cadmium Tank 7	648
Total Amperage of Bright Cadmium Tank 10 (amp)	540

**Cadmium Plating Emissions**

Cadmium Plating Tanks	Tank 7 (LHE Cadmium)	Tank 10 (Bright Cadmium)
<b>Uncontrolled</b>		
<sup>1</sup> Uncontrolled PM totalEmission Factor (grains/amp-hr)	0.25	0.25
<sup>2</sup> Adjusted Uncontrolled Total PM Emission Factor (grains/amp-hr)	0.083	0.083
<sup>3</sup> Uncontrolled Cadmium Compounds Emission Factor (grains/amp-hr)	0.040	0.040
<sup>4</sup> Maximum Amperage of Nickel Tank Rectifier (amps)	648.00	540.00
<sup>5</sup> Uncontrolled Total PM Emission Rate (lb/hr)	7.71E-03	6.43E-03
<sup>6</sup> Uncontrolled Cadmium Compounds Emission Rate (lb/hr)	3.70E-03	3.09E-03
<sup>7</sup> Hood Capture Efficiency (%)	98%	98%
<sup>8</sup> Total PM Emissions Captured by the Hood (lb/hr)	7.56E-03	6.30E-03
<sup>9</sup> Total Cadmium Compounds Captured by the Hood (lb/hr)	3.63E-03	3.02E-03
<sup>10</sup> Building Capture Efficiency	50%	50%
<sup>11</sup> Uncaptured Total PM Fugitive Emissions Rate (lb/hr)	7.71E-05	6.43E-05
<sup>12</sup> Uncaptured Cadmium Compound Fugitive Emission Rate (lb/hr)	3.70E-05	3.09E-05
<sup>13</sup> Total Operating Hours per week	80	80
Total Operating Hours Per Year	4,160	4,160
Uncaptured Annual Total PM Fugitive Emission Rate (tons/year)	1.60E-04	1.34E-04
Uncaptured Annual Total Cadmium Compounds Fugitive Emission Rate (tons/year)	7.70E-05	6.42E-05
Captured Annual Total PM Emission Rate (tons/yr)	0.016	0.013
Captured Annual Cadmium Compounds Emission Rate (tons/yr)	0.0075	0.0063
<b>Controlled</b>		
<sup>14</sup> Type of Control	Mesh-Pad Mist Eliminator	Mesh-Pad Mist Eliminator
<sup>15</sup> Controlled Total PM Emission Factor (grains/dscf)	2.60E-05	2.60E-05
<sup>16</sup> Controlled Total PM Emission Factor (grains/amp-hr)	2.60E-03	2.60E-03
<sup>17</sup> Adjusted Controlled Total PM Emission Factor (grains/amp-hr)	3.03E-05	3.03E-05
<sup>18</sup> Controlled Cadmium Compounds Emission Factor (grains/dscf)	1.40E-07	1.40E-07
<sup>19</sup> Controlled Cadmium Compounds Emission Factor (grains/amp-hr)	1.40E-05	1.40E-05
<sup>20</sup> Maximum Amperage of Cadmium Tank Rectifier (amps)	648	540
<sup>21</sup> Controlled Total PM Emission Rate (lb/hr)	2.81E-06	2.34E-06
<sup>22</sup> Controlled Cadmium Compounds Emission Rate(lb/hr)	1.30E-06	1.08E-06
<sup>23</sup> Hood Capture Efficiency (%)	98%	98%
<sup>24</sup> Total PM Emissions Captured by the Hood (lb/hr)	2.75E-06	2.29E-06
<sup>25</sup> Total Cadmium Compounds Captured by the Hood (lb/hr)	1.27E-06	1.06E-06
<sup>26</sup> Tanks Total Operating Hours per week	80	80
<sup>27</sup> Total Operating Hours Per Year	4160	4160
Annual Controlled PM Emission Rate (tons/yr)	5.72E-06	4.77E-06
Annual Controlled Cadmium Compounds Emission Rate (tons/yr)	2.64E-06	2.20E-06

<sup>1</sup>TCEQ Chromium Plating & Anodizing Operations Using Chromic Acid Guidance: Table 12.20-1 Emission Factors for Chromium Electroplating

<sup>2</sup>The total emission factor was adjusted based on a ratio of Cadmium and Chromium emission factor

Adjusted Particulate Matter Emission Factor for Chromium tanks = Emission Factor of Chromium Compounds ÷ Emission Factor of Chromium Compounds

<sup>3</sup>TCEQ Chromium Plating & Anodizing Operations Using Chromic Acid Guidance: Table 12.20-4 Emission Factors for Electroplating-Other Metals

<sup>4</sup>Emission Rate of Total PM (lb/hr) = Emission Factor Total PM (grains/amp-hr) \* Maximum amperage (amp) ÷ 7000 (grains/lb)

<sup>5</sup>Emission Rate of Cadmium Compound (lb/hr) = Emission Factor Cadmium Compound (grains/hr-amp) \* Maximum Amperage (amp) ÷ 7000 (grains/lb)

<sup>6</sup>Industrial Ventilation, A Manual of Recommended Practices can be considered to have 98% capture efficiency

<sup>7</sup>Total PM Emissions Captured by the Hood (lb/hr) = Uncontrolled Emission Rate PM Total (lb/hr) \* Hood Capture Efficiency (%)

<sup>8</sup>Total Cadmium Compounds Captured by the Hood (lb/hr) = Uncontrolled Emission Rate Cadmium Compounds (lb/hr) \* Hood Capture Efficiency

<sup>9</sup>TCEQ Chromium Plating and Anodizing Operations Using Chromic Acid Guidance: Building has a capture efficiency of 50%

<sup>10</sup>Uncaptured Fugitive Total PM Emission Rate (lb/hr) = Uncontrolled Total PM Emission Rate (lb/hr) \* [1 - Capture efficiency] \* [1 - Building Capture Efficiency]

<sup>11</sup>Uncaptured Fugitive Cadmium Compounds Emission Rate (lb/hr) = Uncontrolled Total Cadmium Compound Emission Rate \* [1 - Capture efficiency] \* [1 - Building Capture Efficiency]

<sup>12</sup>The metal plating operations will operate 80 hours a week. When tanks are not in operations the tanks are covered.

<sup>13</sup>The Mesh-Pad Eliminator only controls emission captured by the hood.

**\*Cadmium Plating Emissions Summary**

Unit Number	Description	Uncontrolled			
		PM <sub>10</sub> /PM <sub>2.5</sub>		Cadmium Compounds	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)
TANK-7	Cadmium Tank Emissions	0.0076	0.016	3.63E-03	7.55E-03
FUG-7	Cadmium Tank Fugitives	7.71E-05	1.60E-04	3.70E-05	7.70E-05
TANK-10	Cadmium Tank Emissions	0.0063	0.013	3.02E-03	6.29E-03
Fug-10	Cadmium Tank Fugitives	6.43E-05	1.34E-04	3.09E-05	6.42E-05

Unit Number	Description	Controlled			
		PM <sub>10</sub> /PM <sub>2.5</sub>		Cadmium Compounds	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)
TANK-7	Cadmium Tank Emissions	2.75E-06	5.72E-06	1.27E-06	2.64E-06
FUG-7	Cadmium Tank Fugitives	7.71E-05	1.60E-04	3.70E-05	7.70E-05
TANK-10	Cadmium Tank Emissions	2.34E-06	4.77E-06	1.08E-06	2.20E-06
Fug-10	Cadmium Tank Fugitives	6.43E-05	1.34E-04	3.09E-05	6.42E-05

<sup>14</sup>98% of tank emissions are captured by a hood. The uncaptured emissions (2%) are assumed to be fugitive emissions. Of these fugitive emissions, only 50% are released to the atmosphere as it is assumed the other 50% are captured by the building itself. Once the emissions are captured by the hood (non-fugitive emissions), they are controlled by a mesh-pad mist eliminator.

Adjusted Uncontrolled Total PM Emission Factor for Nickel	
0.25	Total PM Emission Factor (grains/amp-hr)
0.040	Emission Factor Cadmium Compounds (grains/amp-hr)
0.12	Emission Factor Chromium Compounds (grains/amp-hr)
0.083	Adjusted Total PM Emission Factor (grains/amp-hr)

Adjusted Controlled Total PM Emission Factor for Nickel	
2.60E-03	Total PM Emission Factor (grains/amp-hr)
1.40E-05	Emission Factor Cadmium Compounds (grains/amp-hr)
1.20E-03	Emission Factor Chromium Compounds (grains/amp-hr)
3.03E-05	Adjusted Total PM Emission Factor (grains/amp-hr)

40 CFR WWWWWW Determination			
Tank 7 LHE Cadmium			
Cadmium Metal			
Cadmium Metal		Water	
7.50	ounces of Cadmium per gallon	1	gallon of water
212.62	grams of Cadmium per gallon	3785.41	cm <sup>3</sup> of water
		3785.41	grams of water

5.6%	Weight percentage of Cadmium in solution
0.10%	Regulation Cut Off
Yes	Subject to 40 CFR WWWWWW

40 CFR WWWWWW Determination			
Tank 10 Bright Cadmium			
Cadmium Metal			
Cadmium Metal		Water	
4.50	ounces of Cadmium per gallon	1	gallon of water
127.57	grams of Cadmium per gallon	3785.41	cm <sup>3</sup> of water
		3785.41	grams of water

3.4%	Weight percentage of Cadmium in solution
0.10%	Regulation Cut Off
Yes	Subject to 40 CFR WWWWWW

**AerSale Component Solution**  
**Metal Plating - HCL Tanks (Tank 13)**

**Inputs provided by Aersale Component Solutions (07/02/2019)**

A = Surface area of tank (in <sup>2</sup> )	1080
T = Operating temperature (C°)	25.00

Weight Percentage of pure HCl in mixture	11%
Mol Percentage of HCl in mixture	5%
Mol Percentage of water in mixture	95%

**Hydrochloric Acid Tank Emissions**

Evaporation Rate Emission Calculation <sup>1</sup>	
A = Surface area of tank (ft <sup>2</sup> )	7.5
T = Operating temperature (C°)	25.00
T <sub>L</sub> = Operating temperature (K°)	298.15
Weight Percent of HCl (w/w %)	10.8
<sup>2</sup> P <sub>SAT</sub> = Saturated Solvent Vapor Pressure (mmHg)	0.010
M <sub>i</sub> = Molecular Weight of HCl (lb/lb-mol)	36.5
R = Ideal gas constant (ft <sup>3</sup> *mmHg)/(lb-mol*K)	998.9
<sup>3</sup> K <sub>O</sub> = mass transfer coefficient of H <sub>2</sub> O (cm/s)	0.83
<sup>3</sup> K <sub>i</sub> = mass transfer coefficient of HCl (cm/s)	0.66
<sup>4</sup> K <sub>i</sub> = mass transfer coefficient of HCl (ft/hr)	77.48
<sup>5</sup> E <sub>n</sub> = Evaporation rate from tank (lb/hr)	7.03E-04
Tank Emission Calculation	
Uncontrolled Emission rate of HCl (lb/hr)	7.03E-04
<sup>6</sup> Hood capture efficiency (%)	98%
<sup>7</sup> HCl Captured by the Hood (lb/hr)	6.89E-04
<sup>8</sup> Building Capture Efficiency	50%
<sup>9</sup> Uncaptured Total HCl Fugitive Emissions Rate (lb/hr)	7.03E-06
<sup>10</sup> Tank Total Operating Hours per Week	80
OY= Annual operating hours	4160
Uncaptured Annual HCl Fugitive Emission Rate (tons/year)	1.46E-05
Annual HCl Emission Rate (tons/yr)	1.43E-03

**Notes:**

<sup>1</sup>Calculation methodology from: Methods for Estimating Air Emissions from Chemical Manufacturing Facilities; Mitchell Scientific Inc. & RTI International (n.d.). Volume II. Chapter 16

<sup>2</sup>Saturated Vapor Pressure was calculated from Perry's Chemical Engineering Handbook; 8th Edition

using table 2-11 Partial Pressures of Water over Aqueous Solution of HCl and table 2-12 Partial Pressures of HCl over Aqueous Solutions of HCl

<sup>3</sup>The mass transfer coefficient was calculated from: Methods for Estimating Air Emissions from Chemical Manufacturing Facilities using equation 3-27. Where:

$$K_i = K_o \left( \frac{M_o}{M_i} \right)^{1/3}$$

K<sub>i</sub> = Mass transfer coefficient of volatile compound

K<sub>O</sub> = Mass transfer coefficient of water

M<sub>O</sub> = Molecular weight of Water

M<sub>i</sub> = Molecular weight of volatile compound

<sup>4</sup>K<sub>i</sub> (ft/hr) = K<sub>i</sub>(cm/s) \* 3600 (s/hr) ÷ 30.48 (cm/ft)

<sup>5</sup>The mass transfer coefficient was calculated from Methods for Estimating Air Emissions from Chemical Manufacturing Facilities using equation 3-24

$$E_{n-1} = \frac{M_i K_i A P_i^{sat}}{RT_L}$$

E<sub>n</sub> = Evaporation rate (mass/time)

M<sub>i</sub> = Molecular weight of volatile compound

K<sub>i</sub> = Mass transfer coefficient of volatile compound

A = is the evaporation surface area

P<sub>sat</sub> = is the saturated solvent vapor pressure

R = is the ideal gas constant

T<sub>L</sub> = is the absolute temperature of the liquid

<sup>6</sup>Industrial Ventilation, A Manual of Recommended Practices can be considered to have 98% capture efficiency.

<sup>7</sup>Total HCl Emissions Captured by the Hood (lb/hr) = Uncontrolled Emission Rate (lb/hr) \* Hood Capture Efficiency (%)

<sup>8</sup>The Building has a capture efficiency of 50% (TCEQ Guidance)

<sup>9</sup>Uncaptured Fugitive Total HCl Emission Rate (lb/hr) = Uncontrolled Total HCl Emission Rate (lb/hr) \* [1 - Capture efficiency] \* [1 - Building Capture Efficiency]

<sup>10</sup>The metal plating operations will operate 80 hours a week. When tanks are not in operations, the tanks are covered.

**Acid Tank Emissions Summary**

Unit Number	Description	Tank 13	
		(lb/hr)	(tpy)
TANK-13	HCl Acid Tank Emissions	6.89E-04	1.43E-03
FUG-13	HCl Acid Tank Fugitives	7.03E-06	1.46E-05
Total	Total	6.96E-04	1.45E-03

Weight % in HCl Solution	
Water	62%
HCl	38%

Tank 13 HCl			
HCl		*Water	
38	ounces of HCl solution in one gallon water <sup>1</sup>	1	gallon of water
14.44	ounces of pure HCl in one gallon water <sup>2</sup>	3785.41	cm <sup>3</sup> of water
409	grams of pure HCl in one gallon of water	3785.41	grams of water
11.2	moles of pure HCl in one gallon of water	210.30	moles of water

<sup>1</sup>The ounces of HCl solution in one gallon are based on the maximum amount of HCl solution found in one gallon of w

<sup>2</sup>There is 38 ounces of solution in one gallon of water. The HCl solution is composed of 38 weight % of HCl

\*It was conservatively assumed that solution is pure water in terms of mass

MW (g/mol)	
HCl	36.46
Water	18.0

Tank 13 Partial Pressure of HCL over Aqueous Mixture of HCl			
	Lower Bound	Mixture	Upper Bound
Reference	Table 2-12	**Calculated	Table 2-12
Temp	25	25	25
Conc (x)	10%	11%	12%
Partial Pressure (y)	0.0067	0.010	0.0145

\*\*Linear interpolation: P<sub>2</sub> = (C<sub>2</sub>-C<sub>1</sub>)\*(P<sub>3</sub>-P<sub>1</sub>)/(C<sub>3</sub>-C<sub>1</sub>)+P<sub>1</sub>

**AerSale Component Solution**  
**Metal Plating- Nitric Acid Tank (Tank 20)**

**Inputs provided by Aersale Component Solutions (07/02/2019)**

A = Surface area of tank (in <sup>2</sup> )	1080
T = Operating temperature (C°)	25

Weight Percent of Pure Nitric Acid in one gallon of water	10.04%
Mol Percentage of Pure Nitric Acid in solution	3%
Mol Percentage of Pure Water in Solution	97%

Nitric Acid Tank Emissions	TANK 20 (HNO <sub>3</sub> )
<b>Evaporation Rate Emission Calculation<sup>1</sup></b>	
A = Surface area of tank (ft <sup>2</sup> )	7.5
T = Operating temperature (C°)	25.00
T <sub>L</sub> = Operating temperature (K°)	298.15
Weight Percent of Nitric Acid (w/w %)	10.0%
<sup>2</sup> P <sub>SAT</sub> = Saturated Solvent Vapor Pressure (mmHg)	0.090
M <sub>i</sub> = Molecular Weight of Nitric Acid (lb/lb-mol)	63.01
R = Ideal gas constant (ft <sup>3</sup> *mmHg)/(lb-mol*K)	998.9
<sup>3</sup> K <sub>O</sub> = mass transfer coefficient of H <sub>2</sub> O (cm/s)	0.83
<sup>3</sup> K <sub>i</sub> = mass transfer coefficient of Nitric Acid (cm/s)	0.55
<sup>4</sup> K <sub>i</sub> = mass transfer coefficient of Nitric (ft/hr)	64.56
<sup>5</sup> E <sub>n</sub> = Evaporation rate from tank (lb/hr)	9.22E-03
<b>Tank Emission Calculation<sup>6</sup></b>	
Uncontrolled Emission rate of Nitric Acid (lb/hr)	9.22E-03
<sup>6</sup> Hood capture efficiency (%)	98%
<sup>7</sup> Nitric Acid Captured by the Hood (lb/hr)	9.04E-03
<sup>8</sup> Building Capture Efficiency	50%
<sup>9</sup> Uncaptured Total Nitric Acid Fugitive Emissions Rate (lb/hr)	9.22E-05
<sup>10</sup> Tank Total Operating Hours per Week	80.00
OY= Annual operating hours	4160
Uncaptured Annual Nitric Acid Fugitive Emission Rate (tons/year)	1.92E-04
Annual Nitric Acid Emission Rate (tons/yr)	1.88E-02

**Notes**

<sup>1</sup>Calculation methodology from: Methods for Estimating Air Emissions from Chemical Manufacturing Facilities; Mitchell Scientific Inc. & RTI International (n.d.). Volume II. Chapter 16

<sup>2</sup>Saturated Vapor Pressure was calculated from Perry's Chemical Engineering Handbook; 8th Edition using table 2-18 Partial Pressures of HNO<sub>3</sub> and H<sub>2</sub>O over Aqueous Solution of HNO<sub>3</sub>

<sup>3</sup>The mass transfer coefficient was calculated from: Methods for Estimating Air Emissions from Chemical Manufacturing Facilities using equation 3-27. Where:

$$K_i = K_o \left( \frac{M_o}{M_i} \right)^{1/3}$$

K<sub>i</sub> = Mass transfer coefficient of volatile compound

K<sub>O</sub> = Mass transfer coefficient of water

M<sub>O</sub> = Molecular weight of Water

M<sub>i</sub> = Molecular weight of volatile compound

<sup>4</sup>K<sub>i</sub> (ft/hr) = K<sub>i</sub>(cm/s) \* 3600 (s/hr) ÷ 30.48 (cm/ft)

<sup>5</sup>The mass transfer coefficient was calculated from Methods for Estimating Air Emissions from Chemical Manufacturing Facilities using equation 3-24

$$E_{n-1} = \frac{M_i K_i A P_i^{sat}}{R T_L}$$

E<sub>n</sub> = Evaporation rate (mass/time)

M<sub>i</sub> = Molecular weight of volatile compound

K<sub>i</sub> = Mass transfer coefficient of volatile compound

A = is the evaporation surface area

P<sub>sat</sub> = is the saturated solvent vapor pressure

R = is the ideal gas constant

T<sub>L</sub> = is the absolute temperature of the liquid

<sup>6</sup>Industrial Ventilation, A Manual of Recommended Practices can be considered to have 98% capture efficiency

<sup>7</sup>Total Nitric Acid Emissions Captured by the Hood (lb/hr) = Uncontrolled Emission Rate (lb/hr) \* Hood Capture Efficiency (%)

<sup>8</sup>The Building has a capture efficiency of 50% (TCEQ Guidance)

<sup>9</sup>Uncaptured Fugitive Total Nitric Acid Emission Rate (lb/hr) = Uncontrolled Total Nitric Acid Emission Rate (lb/hr) \* [1 - Capture efficiency] \* [1 - Building Capture Efficiency]

<sup>10</sup>The metal plating operations will operate 80 hours a week. When tanks are not in operation, the tanks are covered.

**Acid Tank Emissions Summary**

Unit Number	Description	Acid Emissions	
		(lb/hr)	(tpy)
TANK-13	Nitric Acid Tank Emissions	9.04E-03	1.88E-02
FUG-13	Nitric Acid Tank Fugitives	9.22E-05	1.92E-04

Weight % in Nitric Acid Solution	
Water	80%
Nitric Acid	20%

TANK 20 Nitric Acid			
Nitric Acid		Water	
67	ounces of Nitric Acid Solution in one gallon water <sup>1</sup>	1	gallon of water
13.4	ounces of Pure Nitric Acid in one gallon water <sup>2</sup>	3785.41	cm <sup>3</sup> of water
380	grams of Pure Nitric Acid in one gallon of water	3785.41	grams of water
6.03	moles of Pure Nitric Acid in one gallon of water	210.30	mol of water

<sup>1</sup>The ounces of Nitric Acid solution in one gallon are based on the maximum amount of Nitric Acid solution found in one gallon of water.

<sup>2</sup>There is 67 ounces of solution in one gallon of water. The Nitric Acid solution is composed of 20 weight % of Nitric Acid

\*It was conservatively assumed that solution is pure water in terms of mass

MW (g/mol)	
HNO <sub>3</sub>	63.01
Water	18.0

Tank 20 Partial Pressure of Nitric Acid over Aqueous Solution of Nitric Acid		
Description	Solution Parameters	**Conservative Parameters
Reference	Table 2-18	Table 2-18
Temp	25	55
Conc (x)	10%	20%
Partial Pressure (y)	Out of Range	0.090

\*\*10 Weight % of Nitric Acid at 25 degrees was not included in the Table;

therefore, 20 Weight % of Nitric Acid at 55 degrees was used as a conservative assumption

**AerSale Component Solution**  
**Metal Plating- Nitric Acid Tanks (Tank 24)**

**Inputs provided by Aersale Component Solutions (07/02/2019)**

A = Surface area of tank (in <sup>2</sup> )	1080
T = Operating temperature (C°)	60

Weight Percent of Nitric Acid in one liter of water	9.00%
Mol Percent of Nitric in one liter of water	2.57%
Mol Percent of Nitric in one liter of water	97.43%

Nitric Acid Tank Emissions	Tank 24 (HNO <sub>3</sub> )
<b>Evaporation Rate Emission Calculation<sup>1</sup></b>	
A = Surface area of tank (ft <sup>2</sup> )	7.5
T = Operating temperature (C°)	60
T <sub>i</sub> = Operating temperature (K°)	333.15
Weight Percent of Nitric Acid (w/w %)	9.0%
<sup>2</sup> P <sub>SAT</sub> = Saturated Solvent Vapor Pressure (mmHg)	0.13
M <sub>i</sub> = Molecular Weight of Nitric Acid (lb/lb-mol)	63.01
R = Ideal gas constant (ft <sup>3</sup> *mmHg/(lb-mol*K)	998.9
<sup>3</sup> K <sub>O</sub> = mass transfer coefficient of H <sub>2</sub> O (cm/s)	0.83
<sup>3</sup> K <sub>i</sub> = mass transfer coefficient of Nitric Acid (cm/s)	0.55
<sup>4</sup> K <sub>i</sub> = mass transfer coefficient of Nitric (ft/hr)	64.56
<sup>5</sup> E <sub>n</sub> = Evaporation rate from tank (lb/hr)	0.012
<b>Tank Emission Calculation<sup>5</sup></b>	
Uncontrolled Emission rate of Nitric Acid (lb/hr)	0.012
<sup>6</sup> Hood capture efficiency (%)	98%
Nitric Acid Captured by the Hood (lb/hr)	0.012
<sup>8</sup> Building Capture Efficiency	50%
<sup>9</sup> Uncaptured Total Nitric Acid Fugitive Emissions Rate (lb/hr)	1.19E-04
<sup>10</sup> Tank Total Operating Hours per Week	80.00
OY= Annual operating hours	4160
Uncaptured Annual Nitric Acid Fugitive Emission Rate (tons/year)	2.48E-04
Annual Nitric Acid Emission Rate (tons/yr)	0.024

**Notes:**

<sup>1</sup>Calculation methodology from: Methods for Estimating Air Emissions from Chemical Manufacturing Facilities; Mitchell Scientific Inc. & RTI International (n.d.). Volume II. Chapter 16

<sup>2</sup>Saturated Vapor Pressure was calculated from Perry's Chemical Engineering Handbook; 8th Edition using table 2-18 Partial Pressures of HNO<sub>3</sub> and H<sub>2</sub>O over Aqueous Solution of HNO<sub>3</sub>

<sup>3</sup>The mass transfer coefficient was calculated from: Methods for Estimating Air Emissions from Chemical Manufacturing Facilities using equation 3-27. Where:

$$K_i = K_o \left( \frac{M_o}{M_i} \right)^{1/3}$$

K<sub>i</sub> = Mass transfer coefficient of volatile compound

K<sub>O</sub> = Mass transfer coefficient of water

M<sub>O</sub> = Molecular weight of Water

M<sub>i</sub> = Molecular weight of volatile compound

<sup>4</sup>K<sub>i</sub> (ft/hr) = K<sub>i</sub>(cm/s) \* 3600 (s/hr) ÷ 30.48 (cm/ft)

<sup>5</sup>The mass transfer coefficient was calculated from Methods for Estimating Air Emissions from Chemical Manufacturing Facilities using equation 3-24

$$E_{n-1} = \frac{M_i K_i A P_i^{sat}}{RT_L}$$

E<sub>n</sub> = Evaporation rate (mass/time)

M<sub>i</sub> = Molecular weight of volatile compound

K<sub>i</sub> = Mass transfer coefficient of volatile compound

A = is the evaporation surface area

P<sub>sat</sub> = is the saturated solvent vapor pressure

R = is the ideal gas constant

T<sub>L</sub> = is the absolute temperature of the liquid

<sup>6</sup>Industrial Ventilation, A Manual of Recommended Practices can be considered to have 98% capture efficiency

<sup>7</sup>Total Nitric Acid Emissions Captured by the Hood (lb/hr) = Uncontrolled Emission Rate (lb/hr) \* Hood Capture Efficiency (%)

<sup>8</sup>The Building has a capture efficiency of 50% (TCEQ Guidance)

<sup>9</sup>Uncaptured Fugitive Total Nitric Acid Emission Rate (lb/hr) = Uncontrolled Total Nitric Acid Emission Rate (lb/hr) \* [1 - Capture efficiency] \* [1 - Building Capture Efficiency]

<sup>10</sup>The metal plating operations will operate 80 hours a week. When tanks are not in operations the tanks are covered.

**Acid Tank Emissions Summary**

Unit Number	Description	Acid Emissions	
		(lb/hr)	(tpy)
Tank-24	Nitric Acid Tank Emissions	0.012	0.024
FUG-24	Nitric Acid Tank Fugitives	1.19E-04	2.48E-04

Weight % in Nitric Acid Solution	
Water	80%
Nitric Acid	20%

Tank 24 Nitric Acid			
450	grams of Nitric Acid Solution in one liter water <sup>1</sup>	1	1 liter of water
90	grams of Pure Nitric Acid in one liter of water <sup>2</sup>	1000.00	cm <sup>3</sup> of water
1.43	moles of Nitric Acid/liter of water	1000.00	grams of water in 1 liter
		55.6	moles of water in 1 liter

<sup>1</sup>The grams of Nitric Acid solution in one gallon are based on the maximum amount of Nitric Acid solution found in one liter of water.

<sup>2</sup>There is 450 grams of solution in one gallon of water. The Nitric Acid solution is composed of 20 weight % of Nitric Acid

\*It was conservatively assumed that solution is pure water in terms of mass

MW (g/mol)	
HNO <sub>3</sub>	63.01
Water	18.0

Tank 24 Partial Pressure of Water over Aqueous Solution of Nitric Acid		
Description	Solution Parameters	**Adjusted Parameters
Reference	Table 2-18	Table 2-18
Temp	60	60
Conc (x)	9.0%	20.0%
Partial Pressure (y)	Out of range	0.13

\*\*9 Weight % of Nitric Acid at 60 degrees was not included in the Table;

therefore, 20 Weight % of Nitric Acid at 60 degrees was used as a conservative assumption

**AerSale Component Solution****Paint Booth Heater**

Heater Input Information			
Unit(s):	H-1		
Description:	1.36 MMBtu/hr heater		
Heat input:	1.36	MMBtu/hr	Manufacturer Specification
Fuel heat value:	94,000	Btu/gal	AP-42 Appendix A
Fuel Usage:	14	gal/hr	
Operating hours:	8760	hours/year	

Emission Calculations per Unit							
	NO <sub>x</sub>	CO	VOC	SO <sub>2</sub> <sup>1</sup>	PM <sup>2</sup>	Unit	Notes
Emission Factors	13	7.5	1	-	0.7	lb/10 <sup>3</sup> gal kg/MMBtu lb/MMBtu	AP-42 Table 1.5-1 Table C-1 and C-2 of 40 CFR 98 Sub
Emissions	0.19 0.82	0.11 0.48	0.014 0.063	- -	0.010 0.044	lb/hr <sup>3</sup> tons/year <sup>4</sup>	

<sup>1</sup>Based on AP-42 Appendix A, LPG has negligible sulfur content

<sup>2</sup>Assumes TSP = PM<sub>10</sub> = PM<sub>2.5</sub>

<sup>3</sup>lb/hr emissions calculated using the following methods:

NO<sub>x</sub>, CO, VOC, and PM lb/hr = EF (lb/10<sup>3</sup> gal) \* Fuel Usage (gal/hr)

<sup>4</sup>ton/yr emissions calculated using the following methods:

NO<sub>x</sub>, CO, VOC, and PM ton/yr = EF (lb/10<sup>3</sup> gal) \* Fuel Usage (gal/hr) \* 8760 (hr/yr) ÷ 2000 (lb/ton)



**Microboilers**

(Exempt pursuant to 20.2.72.202.B.(5) NMAC)

Unit: MB-1, MB-2  
 Heat Input: 0.020 MMBTU/hr  
 Fuel Heat Value: 1020.00 BTU/scf  
 Fuel Sulfur Content: 2 gr/100 scf  
 Operating Hours: 8,760 hours/yr  
 Fuel Usage: 19.51 scf/hr

Criteria Pollutant Emission Rates per Unit							
	NO <sub>x</sub>	CO	VOC	SO <sub>2</sub> <sup>1</sup>	PM <sup>2</sup>	Units	Notes
Emission Factors	100	84	5.5	-	7.6	lb/MMscf	AP-42 Table 1.4-1 & 2
	100.00	84.00	5.50	-	7.60	lb/MMscf	Adjusted EF, per footnote a in Tables 1.4-1 and 1.4-2
	-	-	-	2	-	gr / 100 scf	
Emissions	1.95E-03	1.64E-03	1.07E-04	1.11E-04	1.48E-04	lb/hr <sup>3</sup>	
	8.55E-03	7.18E-03	4.70E-04	4.88E-04	6.49E-04	tons/year <sup>4</sup>	

HAP Emission Rates per Unit							
	n-Hexane	Benzene	Toluene	HCHO	Total HAPs	Units	Notes
Emission Factors	1.80E+00	2.10E-03	3.40E-03	7.50E-02	-	lb/MMscf	AP-42 Table 1.4-3
	1.80E+00	2.10E-03	3.40E-03	7.50E-02	-	lb/MMscf	Adjusted EF, per footnote a in Table 1.4-3
Emissions	3.51E-05	4.10E-08	6.63E-08	1.46E-06	3.67E-05	lb/hr <sup>3</sup>	
	1.54E-04	1.79E-07	2.91E-07	6.41E-06	1.61E-04	tons/year <sup>4</sup>	

## Notes:

<sup>1</sup> SO<sub>2</sub> emissions based on fuel sulfur (2 gr/100 scf)<sup>2</sup> Assumes PM<sub>10</sub> = PM<sub>2.5</sub><sup>3</sup> lb/hr emissions calculated using the following methods:

Criteria and HAPs lb/hr = EF (lb/MMscf) \* Rating (MMBtu/hr) / Heat value (Btu/scf)

<sup>4</sup> For all pollutant calculations, tons/year = lb/hr \* Operating hours \* 1ton/2000lb<sup>5</sup> Total HAP emissions are the sum of all individual HAPs calculated.

## Emission Summary

Paint No.	Chemical	Nomenclature	Uncontrolled Emission Summary <sup>1,2</sup>									
			VOC		HAP		TAP		PM <sub>10</sub>		PM <sub>2.5</sub>	
			lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1	515K011	Green Primer	7.67	0.35	2.33	0.11	4.34	0.17	2.23	0.10	2.37	0.078
2	AXPG-6-Y26	Yellow Topcoat	5.89	6.47E-03	3.49	3.83E-03	2.53	2.77E-03	1.77	1.94E-03	3.54	1.29E-03
3	ECL-G-101	707 Gray	4.30	0.14	-	-	3.54	0.11	-	-	5.28	0.17
4	AXPF-6-BLK	Black	8.13	2.93E-03	2.06	7.44E-04	6.38	2.30E-03	2.26	8.14E-04	-	-
5	AXPF-6-OR2	Orange Topcoat	6.23	5.61E-04	3.54	3.19E-04	2.53	2.28E-04	1.77	1.59E-04	1.18	1.06E-04
6	AXPG-6-W9	White Topcoat	6.34	1.26E-03	1.84	3.64E-04	4.34	8.60E-04	-	-	5.84	1.16E-03
7	AXPG-6-C30	Aluminum Topcoat	11.27	0.016	0.69	9.91E-04	7.90	0.01	2.41	3.47E-03	-	-
8	463-12-8	Green Primer	7.62	0.026	3.44	0.012	1.49	5.12E-03	3.14	0.011	0.52	1.79E-03
9	AXTS-1-G1Q	Gray Teflon	5.56	2.74E-03	0.15	7.60E-05	5.41	2.66E-03	0.11	5.32E-05	3.24	1.60E-03
10	AXPG-6-R64	Red Topcoat	6.23	2.81E-04	3.54	1.59E-04	2.53	1.14E-04	1.77	7.97E-05	3.54	5.31E-05
11	AXPG-6-W28 G2	White Topcoat	6.23	4.49E-03	3.54	2.55E-03	2.53	1.82E-03	1.77	1.27E-03	3.54	8.50E-04
12	AXPG-6-Y1 Q2	Yellow Topcoat	6.23	2.25E-03	3.54	1.27E-03	2.53	9.11E-04	1.77	6.37E-04	3.54	4.25E-04
13	10P20-44B	Epoxy Primer	7.34	0.069	5.39	0.044	2.35	0.027	2.51	0.029	5.36	0.048
14	S66-22R	Hardener	14.23	0.028	7.66	0.015	5.79	0.011	-	-	-	-
15	C25-90S	Thinner	11.72	0.012	1.97	1.87E-03	1.38	1.87E-03	-	-	-	-
16	AXPG-6-C1	Polyerethane Topcoat	5.40	4.82E-03	2.55	2.35E-03	2.77	2.40E-03	-	-	-	-
17	CA8201 FS # 17875	White MIL Paint	4.21	1.52E-03	2.22	7.99E-04	2.20	7.93E-04	-	-	5.87	2.118E-03
18	AERODUR SG Aluminum	Aluminum Topcoat	5.28	2.02E-03	-	-	2.74	1.05E-03	1.40	5.36E-04	-	-
PAINT-1 Total			14.23	0.35	7.66	0.11	7.90	0.17	3.14	0.10	5.87	0.17
19	Xylan	Teflon	7.23	0.029	0.69	2.71E-03	2.18	8.60E-03	-	-	0.019	7.33E-05
PAINT-3 Total			7.23	0.029	0.69	2.71E-03	2.18	8.60E-03	-	-	0.019	7.33E-05

Paint No.	Chemical	Name	Controlled Emission Summary <sup>1,2</sup>									
			VOC		HAP		TAP		PM <sub>10</sub>		PM <sub>2.5</sub>	
			lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1	515K011	Green Primer	7.67	0.35	2.33	0.11	3.04	0.14	0.010	4.68E-04	0.011	3.60E-04
2	AXPG-6-Y26	Yellow Topcoat	5.89	6.47E-03	3.49	3.83E-03	2.53	2.77E-03	8.13E-03	8.93E-06	0.016	5.95E-06
3	ECL-G-101	707 Gray	4.30	0.14	-	-	3.54	0.11	-	-	0.024	7.79E-04
4	AXPF-6-BLK	Black	8.13	2.93E-03	2.06	7.44E-04	5.94	2.14E-03	0.010	3.74E-06	-	-
5	AXPF-6-OR2	Orange Topcoat	6.23	5.61E-04	3.54	3.19E-04	2.53	2.28E-04	8.13E-03	7.33E-07	5.42E-03	4.89E-07
6	AXPG-6-W9	White Topcoat	6.34	1.26E-03	1.84	3.64E-04	4.34	8.60E-04	-	-	0.027	5.33E-06
7	AXPG-6-C30	Aluminum Topcoat	11.27	0.016	0.69	9.91E-04	5.51	7.94E-03	0.011	1.60E-05	-	-
8	463-12-8	Green Primer	7.62	0.026	3.44	0.012	1.49	5.12E-03	0.014	4.94E-05	2.40E-03	8.24E-06
9	AXTS-1-G1Q	Gray Teflon	5.56	2.74E-03	0.15	7.60E-05	5.41	2.66E-03	4.97E-04	2.45E-07	0.015	7.34E-06
10	AXPG-6-R64	Red Topcoat	6.23	2.81E-04	3.54	1.59E-04	2.53	1.14E-04	8.13E-03	3.66E-07	0.016	2.44E-07
11	AXPG-6-W28 G2	White Topcoat	6.23	4.49E-03	3.54	2.55E-03	2.53	1.82E-03	8.13E-03	5.86E-06	0.016	3.91E-06
12	AXPG-6-Y1 Q2	Yellow Topcoat	6.23	2.25E-03	3.54	1.27E-03	2.53	9.11E-04	8.13E-03	2.93E-06	0.016	1.95E-06
13	10P20-44B	Epoxy Primer	7.34	0.069	5.39	0.044	2.35	0.027	0.012	1.31E-04	0.025	2.19E-04
14	S66-22R	Hardener	14.23	0.028	7.66	0.015	5.79	0.011	-	-	-	-
15	C25-90S	Thinner	11.72	0.012	1.97	1.87E-03	1.38	1.87E-03	-	-	-	-
16	AXPG-6-C1	Polyurethane Topcoat	5.40	4.82E-03	2.55	2.35E-03	2.77	2.40E-03	-	-	-	-
17	CA8201 FS # 17875	White MIL Paint	4.21	1.52E-03	2.22	7.99E-04	2.20	7.93E-04	-	-	0.027	9.74E-06
18	AERODUR SG Aluminum	Aluminum Topcoat	5.28	2.02E-03	-	-	1.34	5.13E-04	6.46E-03	2.47E-06	-	-
PAINT-1 Total			11.27	0.35	3.54	0.11	5.94	0.14	0.014	4.68E-04	0.027	7.79E-04
19	Xylan	Teflon	7.23	0.029	0.69	2.71E-03	2.18	8.60E-03	-	-	8.55E-05	3.37E-07
PAINT-3 Total			7.23	0.029	0.69	2.71E-03	2.18	8.60E-03	-	-	8.55E-05	3.37E-07

<sup>1</sup> lb/hr emissions are based on the assumption that both paint booths will be operating simultaneously.

<sup>2</sup> tpy emissions are based on the assumption that the gal/yr flowrates used in the calculations will not be exceeded, even if both paint booths are used at the same time on an hourly basis. lb/hr emissions conservatively assume both paint booths operating at the same time, but tpy emissions assume that even though both paint booths have the ability to operate at the same time, they will not be operating for 8,760 hours and will be limited by the gal/yr flowrates and paint that the facility stores. The total lb/hr emissions are based on the maximum emission among the paints, because only one paint gun will operate at a given time per paint booth.

Control Efficiency for particulate filters:	99.54%
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	Controlled Emissions for Both Paint Booths									
	VOC		HAP		TAP		PM <sub>10</sub>		PM <sub>2.5</sub>	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Total for PAINT-1	11.27	0.35	3.54	0.11	5.94	0.14	0.014	4.68E-04	0.027	7.79E-04
Total for PAINT-3	7.23	0.029	0.69	2.71E-03	2.18	8.60E-03	-	-	8.55E-05	3.37E-07
Total for All Paint Booths	18.50	0.38	4.22	0.11	8.12	0.15	0.014	4.68E-04	0.027	7.79E-04

PM control Efficiency for Paint Booths	99.54%
--	--------

[illegible]

Paint No.	Chemical	Nomenclature	Toxic Air Pollutants (TAP)																											
			n-Butyl Acetate		Anitimony <sup>1</sup>		Nickel <sup>1</sup>		Methyl Amyl Ketone		Cyclohexanone		Heptan-2-one		Solvent Naptha		Carbon Black <sup>1</sup>		Ethyl Acetate		2-Butoxyethanol		4-hydroxy-4-methylpentan-2-one		Aluminum		Pentan-2-one		Isopropyl Alcohol	
			lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1	515X011	Green Primer	3.03	0.14	4.85E-03	1.10E-04	1.17E-03	2.65E-05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	AXPG-6-Y26	Yellow Topcoat	-	-	-	-	-	-	1.68	1.85E-03	0.84	9.24E-04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	ECL-G-101	707 Gray	0.75	0.024	-	-	-	-	-	-	-	-	2.64	0.085	0.15	4.84E-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	AXPF-6-BUL	Black	0.64	2.33E-04	-	-	-	-	3.87	1.40E-03	-	-	-	-	0.13	4.65E-05	2.08E-03	7.49E-07	1.29	4.65E-04	-	-	-	-	-	-	-	-	-	-
5	AXPF-6-OR3	Orange Topcoat	-	-	-	-	-	-	1.68	1.52E-04	0.84	7.59E-05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	AXPG-6-W9	White Topcoat	-	-	-	-	-	-	3.34	6.62E-04	-	-	-	-	0.17	3.31E-05	-	-	0.83	1.65E-04	-	-	-	-	-	-	-	-	-	-
7	AXPG-6-C30	Aluminum Topcoat	0.69	9.91E-04	-	-	-	-	4.81	6.94E-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.011	1.60E-05	-	-	-	-
8	463-12-B	Green Primer	1.49	5.12E-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	AXTS-1-G1Q	Gray Teflon	2.32	1.14E-03	-	-	-	-	3.09	1.52E-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	AXPG-6-R64	Red Topcoat	-	-	-	-	-	-	1.68	7.59E-05	0.84	3.79E-05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	AXPG-6-W28 G2	White Topcoat	-	-	-	-	-	-	1.68	1.21E-03	0.84	6.07E-04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	AXPG-6-Y1 G2	Yellow Topcoat	-	-	-	-	-	-	1.68	6.07E-04	0.84	3.04E-04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	10920-44B	Epoxy Primer	-	-	-	-	-	-	-	-	-	-	2.35	0.027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	S66-22R	Hardener	5.79	0.011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	C25-905	Thinner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.38	1.87E-03
16	AXPG-6-C1	Polyurethane Topcoat	0.40	3.43E-04	-	-	-	-	1.59	1.37E-03	-	-	-	-	-	-	-	-	0.79	6.86E-04	-	-	-	-	-	-	-	-	-	-
17	CAB201 FS # 17875	White MIL Paint	-	-	-	-	-	-	-	-	-	-	2.00	7.20E-04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	AERODUR SG Aluminum	Aluminum Topcoat	-	-	-	-	-	-	-	-	-	-	-	-	1.34	5.11E-04	-	-	-	-	-	-	-	-	6.46E-03	2.47E-06	0.20	7.26E-05	-	-
19	Xylan	Teflon	-	-	-	-	-	-	-	-	-	-	-	-	0.57	2.23E-03	-	-	-	-	0.81	3.19E-03	0.81	3.19E-03	-	-	-	-	-	-
Total (of any Single TAP) for 1 paint for PAINT-1			5.79	0.14	4.85E-03	1.10E-04	1.17E-03	2.65E-05	4.81	6.94E-03	0.84	9.24E-04	2.64	0.085	1.34	4.84E-03	2.08E-03	7.49E-07	1.29	6.86E-04	-	-	-	-	0.011	1.60E-05	0.20	7.26E-05	1.38	1.87E-03
Total for PAINT-3 (only Paint #19)			-	-	-	-	-	-	-	-	-	-	-	0.57	2.23E-03	-	-	-	-	0.81	3.19E-03	0.81	3.19E-03	-	-	-	-	-	-	-

<sup>1</sup>Nickel Metal, Carbon Black, Aluminum Hydroxide, and Antimony are particulate emissions. The paint booths have particulate paint filters; therefore a 99.54% control is applied to emissions associated with the paint booths

**AerSale Component Solutions**

**Paint Booth Emissions**

**Inputs**

Paint No.	Chemical	Nomenclature	Paint Usage (gal/hr)	Paint Usage (gal/yr)	Paint Sprayer Operation	Paint Usage With Safety Factor (gal/hr) <sup>1</sup>	Paint Usage With Safety Factor (gal/yr) <sup>2</sup>	Transfer Efficiency <sup>3</sup>
<b>Paints used in PAINT-1</b>								
1	515K011	Green Primer	2.22	63.38	50.00%	1.39	126.75	30%
2	AXPG-6-Y26	Yellow Topcoat	2.22	1.52	50.00%	1.39	3.045	30%
3	ECL-G-101	707 Gray	2.22	44.5	50.00%	1.39	89	30%
4	AXPF-6-BLK	Black	2.22	0.5	50.00%	1.39	1	30%
5	AXPF-6-OR2	Orange Topcoat	2.22	0.13	50.00%	1.39	0.25	30%
6	AXPG-6-W9	White Topcoat	2.22	0.28	50.00%	1.39	0.55	30%
7	AXPG-6-C30	Aluminum Topcoat	2.22	2.00	50.00%	1.39	4	30%
8	463-12-8	Green Primer	2.22	4.75	50.00%	1.39	9.5	30%
9	AXTS-1-G1Q	Gray Teflon	2.22	0.68	50.00%	1.39	1.365	30%
10	AXPG-6-R64	Red Topcoat	2.22	0.06	50.00%	1.39	0.125	30%
11	AXPG-6-W28 G2	White Topcoat	2.22	1.00	50.00%	1.39	2	30%
12	AXPG-6-Y1 Q2	Yellow Topcoat	2.22	0.5	50.00%	1.39	1	30%
13	10P20-44B	Epoxy Primer	2.22	11.25	50.00%	1.39	22.5	30%
14	S66-22R	Hardener	2.22	2.64	50.00%	1.39	5.28	30%
15	C25-90S	Thinner	2.22	1.32	50.00%	1.39	2.64	30%
16	AXPG-6-C1	Polyurethane Topcoat	2.22	1.20	50.00%	1.39	2.4	30%
17	CA8201 FS # 17875	White MIL Paint	2.22	0.50	50.00%	1.39	1	30%
18	AERODUR SG Aluminum	Aluminum Topcoat	2.22	0.53	50.00%	1.39	1.06	30%
<b>Paints used in PAINT-3</b>								
19	Xylan	Teflon	0.95	7.5	50.00%	0.59	15	30%

\*The Paint sprayer operates a maximum of 30 min per a given hour.

<sup>1</sup>A 25% safety factor has been added to the gal/hr flowrate to account for variability in painting times and flowrate based on paint viscosity.

Additionally a paint sprayer operates a maximum of 30 min. per a given hour.

<sup>2</sup>A 100% safety factor has been added to the gal/yr flowrate to allow for flexibility in painting operations and an increase in production to meet demand.

<sup>3</sup>Transfer efficiency of 30% taken from "Pollution Prevention Opportunity Data Sheet" for High Transfer Efficiency Paint Spray Systems (05/1995). A transfer efficiency of 0% is conservatively assumed for volatile substances; although the default TE may be listed as 30%, 0% was used for the respective volatile components.

Density of Water	8.33		lb/gal
Flow Rate	2.22	0.95	gal/hr
PM Control Efficiency <sup>4</sup>	99.54%		

<sup>4</sup>The paint booth has filters that operate at a 99.54 capture efficiency.

Flow Rate Based on Spray Gun (PAINT-1 & PAINT-2)		Flow Rate Based on Spray Gun (PAINT-3)	
Model	LPH-400-154LV	Model	LPH-80-104G
140	ml/min	60	ml/min
8400	ml/hr	3600	ml/hr
2.22	gal/hr	0.95	gal/hr
19438.84	gal/yr	8330.93	gal/yr

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Component	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
1	515K011	Green Primer	1.39	126.75	30%	99.54%	1.31	10.93	100%	Talc	Talc	PM <sub>10</sub>	20.00%	20.0%	2.19	2.12	0.097
										n-Butyl Acetate	n-Butyl Acetate	TAP/VOC	20.00%	20.0%	2.19	3.03	0.14
										*Antimony Nickel Titanium Oxide Yellow	Antimony	TAP/PM <sub>2.5</sub>	20.00%	9.9%	1.09	1.05	0.024
										*Antimony Nickel Titanium Oxide Yellow	Nickel	TAP/PM <sub>2.5</sub>	20.00%	2.4%	0.26	0.25	5.77E-03
										4-Methyl-2-Pentanone	4-Methyl-2-Pentanone	VOC	10.00%	10.0%	1.09	1.52	0.069
										Xylene	Xylene	HAP/VOC	10.00%	10.0%	1.09	1.52	0.069
										Calcium Chromate	Calcium Chromate	HAP/PM <sub>2.5</sub>	5.00%	5.0%	0.55	0.53	0.024
										1-Butanol	1-Butanol	VOC	4.50%	4.5%	0.49	0.68	0.031
										Titanium Dioxide	Titanium Dioxide	PM <sub>2.5</sub>	5.00%	5.0%	0.55	0.53	0.024
										Butanone	Butanone	VOC	4.20%	4.2%	0.46	0.64	0.029
										Ethylbenzene	Ethylbenzene	HAP/VOC	1.90%	1.9%	0.21	0.29	0.013
										Crystalline Silica, Respirable Powder	Crystalline Silica, Respirable Powder	PM <sub>10</sub>	1.00%	1.0%	0.11	0.11	4.85E-03
Speciated Emissions															Uncontrolled Emissions	lb/hr	ton/yr
															VOC	7.67	0.35
															HAP	2.33	0.11
															TAP	4.34	0.17
															PM <sub>10</sub>	2.23	0.102
															PM <sub>2.5</sub>	2.37	0.08
															Controlled Emissions	lb/hr	ton/yr
															VOC	7.67	0.35
															HAP	2.33	0.11
															TAP	3.04	0.14
															PM <sub>10</sub>	0.010	4.68E-04
															PM <sub>2.5</sub>	0.011	3.60E-04

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

\*Antimony Nickel Titanium Oxide Yellow is comprised of several metals. The emissions are multiplied by the wt% of metal (nickel & antimony) in the composition.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
2	AXPG-6-Y26	Yellow Topcoat	1.39	3.05	30%	99.54%	1.46	12.14	100%	Strontium Chromate	HAP/PM <sub>2.5</sub>	20.00%	20.0%	2.43	2.36	2.588E-03
										Titanium Dioxide	PM <sub>2.5</sub>	10.00%	10.0%	1.21	1.18	1.294E-03
										Acetone	VOC	10.00%	10.0%	1.21	1.68	1.848E-03
										Talc	PM <sub>10</sub>	10.00%	10.0%	1.21	1.18	1.294E-03
										Methyl Amyl Ketone	TAP/VOC	5.00%	5.0%	0.61	0.84	9.24E-04
										Cyclohexanone	TAP/VOC	5.00%	5.0%	0.61	0.84	9.24E-04
										Methyl Amyl Ketone	TAP/VOC	5.00%	5.0%	0.61	0.84	9.24E-04
										Xylene (pure)	HAP/VOC	5.00%	5.0%	0.61	0.84	9.24E-04
										Quartz Crystalline Silica	PM <sub>10</sub>	5.00%	5.0%	0.61	0.59	6.47E-04
										Methyl Isobutyl Ketone	VOC	5.00%	5.0%	0.61	0.84	9.24E-04
										Toluene	HAP/VOC	1.00%	1.0%	0.12	0.12	1.29E-04
										Ethylbenzene	HAP/VOC	1.00%	1.0%	0.12	0.17	1.85E-04
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	5.89	6.469E-03
														HAP	3.49	3.826E-03
														TAP	2.53	2.772E-03
														PM <sub>10</sub>	1.77	1.941E-03
														PM <sub>2.5</sub>	3.54	1.294E-03
														Controlled Emissions	lb/hr	ton/yr
														VOC	5.89	6.469E-03
														HAP	3.49	3.826E-03
														TAP	2.53	2.772E-03
														PM <sub>10</sub>	8.132E-03	8.93E-06
														PM <sub>2.5</sub>	0.016	5.95E-06

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
3	ECL-G-101	707 Gray	1.39	89.00	30%	99.54%	1.303	10.87	100%	Heptan-2-one	TAP/VOC	25.00%	25.0%	2.72	2.64	0.085
										Titanium Dioxide	PM <sub>2.5</sub>	25.00%	25.0%	2.72	2.64	0.085
										Aluminum Hydroxide	PM <sub>2.5</sub>	20.00%	20.0%	2.17	2.11	0.068
										n-butyl acetate	TAP/VOC	5.00%	5.0%	0.54	0.75	0.024
										bis(1,2,2,6,5-pentamethyl-4-piperidyl) sebacate	VOC	5.00%	5.0%	0.54	0.75	0.024
										Silicon Dioxide	PM <sub>2.5</sub>	5.00%	5.0%	0.54	0.53	0.017
										Solvent naptha (petroleum), light arom	TAP/VOC	1.00%	1.0%	0.11	0.15	4.84E-03
														VOC	4.30	0.14
														HAP	-	-
														TAP	3.54	0.11
														PM <sub>10</sub>	-	-
														PM <sub>2.5</sub>	5.28	0.17
														Controlled Emissions	lb/hr	ton/yr
														VOC	4.30	0.14
														HAP	-	-
														TAP	3.54	0.11
														PM <sub>10</sub>	-	-
														PM <sub>2.5</sub>	0.024	7.79E-04

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.



Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
4	AXPF-6-BLK	Black	1.39	1.00	0.30	99.54%	1.12	9.30	100%	Methyl Amyl Ketone	TAP/VOC	30.00%	30.0%	2.79	3.87	1.40E-03
										Barium Sulfate	PM <sub>10</sub>	20.00%	20.0%	1.86	1.81	6.51E-04
										Xylene (pure)	HAP/VOC	10.00%	10.0%	0.93	1.29	4.65E-04
										Carbon black	TAP/PM <sub>10</sub>	5.00%	5.0%	0.47	0.45	1.63E-04
										Butyl Acetate	TAP/VOC	5.00%	5.0%	0.47	0.64	2.33E-04
										Ethyl Acetate	TAP/VOC	5.00%	5.0%	0.47	0.64	2.33E-04
										Ethyl Acetate	TAP/VOC	5.00%	5.0%	0.47	0.64	2.33E-04
										Ethylbenzene	HAP/VOC	5.00%	5.0%	0.47	0.64	2.33E-04
										Toluene	HAP/VOC	1.00%	1.0%	0.09	0.13	4.65E-05
										Methyl Isobutyl Ketone	VOC	1.00%	1.0%	0.09	0.13	4.65E-05
										VM&P Naphtha	TAP/VOC	1.00%	1.0%	0.09	0.13	4.65E-05
										Speciated Emissions						
VOC	8.13	2.93E-03														
HAP	2.06	7.44E-04														
TAP	6.38	2.30E-03														
PM <sub>10</sub>	2.26	8.14E-04														
PM <sub>2.5</sub>	-	-														
Controlled Emissions	lb/hr	ton/yr														
VOC	8.13	2.93E-03														
HAP	2.06	7.44E-04														
TAP	5.94	2.14E-03														
PM <sub>10</sub>	0.010	3.74E-06														
PM <sub>2.5</sub>	-	-														

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency¹	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
5	AXPF-6-OR2	Orange Topcoat	1.39	0.25	0.30	99.54%	1.46	12.14	100%	Strontium Chromate	HAP/PM <sub>2.5</sub>	20.00%	20.0%	2.43	2.36	2.12E-04
										Titanium Dioxide	PM <sub>2.5</sub>	10.00%	10.0%	1.21	1.18	1.06E-04
										Acetone	VOC	10.00%	10.0%	1.21	1.68	1.52E-04
										Talc	PM <sub>10</sub>	10.00%	10.0%	1.21	1.18	1.06E-04
										Methyl Amyl Ketone	TAP/VOC	5.00%	5.0%	0.61	0.84	7.59E-05
										Cyclohexanone	TAP/VOC	5.00%	5.0%	0.61	0.84	7.59E-05
										Methyl Amyl Ketone	TAP/VOC	5.00%	5.0%	0.61	0.84	7.59E-05
										Xylene (pure)	HAP/VOC	5.00%	5.0%	0.61	0.84	7.59E-05
										Quartz Crystalline Silica	PM <sub>10</sub>	5.00%	5.0%	0.61	0.59	5.31E-05
										Methyl Isobutyl Ketone	VOC	5.00%	5.0%	0.61	0.84	7.59E-05
										Toluene	HAP/VOC	1.00%	1.0%	0.12	0.17	1.52E-05
										Ethylbenzene	HAP/VOC	1.00%	1.0%	0.12	0.17	1.52E-05
										Speciated Emissions						
VOC	6.23	5.61E-04														
HAP	3.54	3.19E-04														
TAP	2.53	2.28E-04														
PM <sub>10</sub>	1.77	1.59E-04														
PM <sub>2.5</sub>	1.18	1.06E-04														
Controlled Emissions	lb/hr	ton/yr														
VOC	6.23	5.61E-04														
HAP	3.54	3.19E-04														
TAP	2.53	2.28E-04														
PM <sub>10</sub>	8.132E-03	7.33E-07														
PM <sub>2.5</sub>	5.422E-03	4.89E-07														

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
6	AXPG-6-W9	White Topcoat	1.39	0.55	30%	99.54%	1.45	12.03	100%	Titanium Dioxide	PM <sub>2.5</sub>	50.00%	50.0%	6.02	5.84	1.16E-03
										Methyl Amyl Ketone	TAP/VOC	20.00%	20.0%	2.41	3.34	6.62E-04
										Xylene (pure)	HAP/VOC	10.00%	10.0%	1.20	1.67	3.31E-04
										Ethyl Acetate	TAP/VOC	5.00%	5.0%	0.60	0.83	1.65E-04
										Ethylbenzene	HAP/VOC	1.00%	1.0%	0.12	0.17	3.31E-05
										Methyl Isobutyl Ketone	VOC	1.00%	1.0%	0.12	0.17	3.31E-05
										Light Aromatic Petroleum Distillate	TAP/VOC	1.00%	1.0%	0.12	0.17	3.31E-05
										Speciated Emissions						
VOC	6.34	1.26E-03														
HAP	1.84	3.64E-04														
TAP	4.34	8.60E-04														
PM <sub>10</sub>	-	-														
PM <sub>2.5</sub>	5.84	1.16E-03														
Controlled Emissions	lb/hr	ton/yr														
VOC	6.34	1.26E-03														
HAP	1.84	3.64E-04														
TAP	4.34	8.60E-04														
PM <sub>10</sub>	-	-														
PM <sub>2.5</sub>	0.027	5.33E-06														

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
7	AXPG-6-C30	Aluminum Topcoat	1.39	4.00	30%	99.54%	1.19	9.91	100%	Methyl n-Amyl Ketone	TAP/VOC	50.00%	50.0%	4.96	4.81	6.94E-03
										Aluminum	TAP/PM <sub>10</sub>	25.00%	25.0%	2.48	2.41	3.47E-03
										Polyester Resin Solids	VOC	15.00%	15.0%	1.49	2.06	2.97E-03
										Acetic Acid Ethyl Ester	VOC	10.00%	10.0%	0.99	0.96	1.39E-03
										Synthetic Isoparaffinic Hydrocarbon	VOC	10.00%	10.0%	0.99	1.37	1.98E-03
										Acetone	VOC	5.00%	5.0%	0.50	0.69	9.91E-04
										Methyl Ethyl Ketone	HAP/VOC	5.00%	5.0%	0.50	0.69	9.91E-04
										Butyl Acetate	TAP/VOC	5.00%	5.0%	0.50	0.69	9.91E-04
										Speciated Emissions						
VOC	11.27	1.63E-02														
HAP	0.69	9.91E-04														
TAP	7.90	0.011														
PM <sub>10</sub>	2.41	3.47E-03														
PM <sub>2.5</sub>	-	-														
Controlled Emissions	lb/hr	ton/yr														
VOC	11.27	1.63E-02														
HAP	0.69	9.91E-04														
TAP	5.51	7.94E-03														
PM <sub>10</sub>	0.011	1.60E-05														
PM <sub>2.5</sub>	-	-														

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.  
<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
8	463-12-8	Green Primer	1.39	9.50	30%	99.54%	1.291	10.77	100%	Talc, not containing asbestiform fibres	PM <sub>10</sub>	15.00%	15.0%	1.62	1.57	5.37E-03
										Mica-group minerals	PM <sub>10</sub>	10.00%	10.0%	1.08	1.05	3.58E-03
										Butanone	VOC	10.00%	10.0%	1.08	1.49	5.12E-03
										Methyl Isobutyl Ketone	VOC	10.00%	10.0%	1.08	1.49	5.12E-03
										Xylene	HAP/VOC	10.00%	10.0%	1.08	1.49	5.12E-03
										Strontium Chromate	HAP/PM <sub>2.5</sub>	10.00%	10.0%	1.08	1.05	3.58E-03
										n-Butyl Acetate	TAP/VOC	10.00%	10.0%	1.08	1.49	5.12E-03
										Butan-1-ol	VOC	5.00%	5.0%	0.54	0.75	2.56E-03
										Titanium Dioxide	PM <sub>2.5</sub>	5.00%	5.0%	0.54	0.52	1.79E-03
										Ethylbenzene	HAP/VOC	5.00%	5.0%	0.54	0.75	2.56E-03
										Chlorite-group minerals	PM <sub>10</sub>	5.00%	5.0%	0.54	0.52	1.79E-03
										Barium Chromate	HAP/VOC	1.00%	1.0%	0.11	0.15	5.12E-04
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	7.62	0.026
														HAP	3.44	0.01
														TAP	1.49	5.12E-03
														PM <sub>10</sub>	3.14	0.01
														PM <sub>2.5</sub>	0.52	1.79E-03
														Controlled Emissions	lb/hr	ton/yr
														VOC	7.62	0.026
														HAP	3.44	0.01
														TAP	1.49	5.12E-03
														PM <sub>10</sub>	0.014	4.94E-05
														PM <sub>2.5</sub>	2.40E-03	8.24E-06

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
9	AXTS-1-G1Q	Gray Teflon	1.39	1.37	30%	99.54%	1.34	11.14	100%	Titanium Dioxide	PM <sub>2.5</sub>	30.00%	30.0%	3.34	3.24	1.60E-03
										Methyl Amyl Ketone	TAP/VOC	20.00%	20.0%	2.23	3.09	1.52E-03
										Butyl Acetate	TAP/VOC	10.00%	10.0%	1.11	1.55	7.60E-04
										Butyl Acetate	TAP/VOC	5.00%	5.0%	0.56	0.77	3.80E-04
										Crystobite Crystalline Silica	PM <sub>10</sub>	1.00%	1.0%	0.11	0.11	5.32E-05
										Ethylbenzene	HAP/VOC	1.00%	1.0%	0.11	0.15	7.60E-05
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	5.56	2.74E-03
														HAP	0.15	7.60E-05
														TAP	5.41	2.66E-03
														PM <sub>10</sub>	0.11	5.32E-05
														PM <sub>2.5</sub>	3.24	1.60E-03
														Controlled Emissions	lb/hr	ton/yr
														VOC	5.56	2.74E-03
														HAP	0.15	7.60E-05
														TAP	5.41	2.66E-03
														PM <sub>10</sub>	4.97E-04	2.45E-07
														PM <sub>2.5</sub>	0.015	7.34E-06

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.  
<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
10	AXPG-6-R64	Red Topcoat	1.39	0.13	30%	99.54%	1.46	12.14	100%	Strontium Chromate	HAP/PM <sub>2.5</sub>	20.00%	20.0%	2.43	2.36	1.06E-04
										Titanium Dioxide	PM <sub>2.5</sub>	10.00%	10.0%	1.21	1.18	5.31E-05
										Acetone	VOC	10.00%	10.0%	1.21	1.68	7.59E-05
										Talc	PM <sub>10</sub>	10.00%	10.0%	1.21	1.18	5.31E-05
										Methyl Amyl Ketone	TAP/VOC	5.00%	5.0%	0.61	0.84	3.79E-05
										Cyclohexanone	TAP/VOC	5.00%	5.0%	0.61	0.84	3.79E-05
										Methyl Amyl Ketone	TAP/VOC	5.00%	5.0%	0.61	0.84	3.79E-05
										Xylene (pure)	HAP/VOC	5.00%	5.0%	0.61	0.84	3.79E-05
										Quartz Crystalline Silica	PM <sub>10</sub>	5.00%	5.0%	0.61	0.59	2.66E-05
										Methyl Isobutyl Ketone	VOC	5.00%	5.0%	0.61	0.84	3.79E-05
										Toluene	HAP/VOC	1.00%	1.0%	0.12	0.17	7.59E-06
										Ethylbenzene	HAP/VOC	1.00%	1.0%	0.12	0.17	7.59E-06
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	6.23	2.81E-04
														HAP	3.54	1.59E-04
														TAP	2.53	1.14E-04
														PM <sub>10</sub>	1.77	7.97E-05
														PM <sub>2.5</sub>	3.54	5.31E-05
														Controlled Emissions	lb/hr	ton/yr
														VOC	6.23	2.81E-04
														HAP	3.54	1.59E-04
														TAP	2.53	1.14E-04
														PM <sub>10</sub>	0.008	3.66E-07
														PM <sub>2.5</sub>	0.016	2.44E-07

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
11	JXPG-6-W28 GZ	White Topcoat	1.39	2.00	30%	99.54%	1.46	12.14	100%	Strontium Chromate	HAP/PM <sub>2.5</sub>	20.00%	20.0%	2.43	2.36	1.70E-03
										Titanium Dioxide	PM <sub>2.5</sub>	10.00%	10.0%	1.21	1.18	8.50E-04
										Acetone	VOC	10.00%	10.0%	1.21	1.68	1.21E-03
										Talc	PM <sub>10</sub>	10.00%	10.0%	1.21	1.18	8.50E-04
										Methyl Amyl Ketone	TAP/VOC	5.00%	5.0%	0.61	0.84	6.07E-04
										Cyclohexanone	TAP/VOC	5.00%	5.0%	0.61	0.84	6.07E-04
										Methyl Amyl Ketone	TAP/VOC	5.00%	5.0%	0.61	0.84	6.07E-04
										Xylene (pure)	HAP/VOC	5.00%	5.0%	0.61	0.84	6.07E-04
										Quartz Crystalline Silica	PM <sub>10</sub>	5.00%	5.0%	0.61	0.59	4.25E-04
										Methyl Isobutyl Ketone	VOC	5.00%	5.0%	0.61	0.84	6.07E-04
										Toluene	HAP/VOC	1.00%	1.0%	0.12	0.17	1.21E-04
										Ethylbenzene	HAP/VOC	1.00%	1.0%	0.12	0.17	1.21E-04
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	6.23	4.49E-03
														HAP	3.54	0.00
														TAP	2.53	1.82E-03
														PM <sub>10</sub>	1.77	1.27E-03
														PM <sub>2.5</sub>	3.54	8.50E-04
														Controlled Emissions	lb/hr	ton/yr
														VOC	6.23	4.49E-03
														HAP	3.54	2.55E-03
														TAP	2.53	1.82E-03
														PM <sub>10</sub>	0.008	5.86E-06
														PM <sub>2.5</sub>	0.016	3.91E-06

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.



Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
12	AXPG-6-Y1 Q2	Yellow Topcoat	1.39	1.00	30%	99.54%	1.46	12.14	100%	Strontium Chromate	HAP/PM <sub>2.5</sub>	20.00%	20.0%	2.43	2.36	8.50E-04
										Titanium Dioxide	PM <sub>2.5</sub>	10.00%	10.0%	1.21	1.18	4.25E-04
										Acetone	VOC	10.00%	10.0%	1.21	1.68	6.07E-04
										Talc	PM <sub>10</sub>	10.00%	10.0%	1.21	1.18	4.25E-04
										Methyl Amyl Ketone	TAP/VOC	5.00%	5.0%	0.61	0.84	3.04E-04
										Cyclohexanone	TAP/VOC	5.00%	5.0%	0.61	0.84	3.04E-04
										Methyl Amyl Ketone	TAP/VOC	5.00%	5.0%	0.61	0.84	3.04E-04
										Xylene (pure)	HAP/VOC	5.00%	5.0%	0.61	0.84	3.04E-04
										Quartz Crystalline Silica	PM <sub>10</sub>	5.00%	5.0%	0.61	0.59	2.12E-04
										Methyl Isobutyl Ketone	VOC	5.00%	5.0%	0.61	0.84	3.04E-04
										Toluene	HAP/VOC	1.00%	1.0%	0.12	0.17	6.07E-05
										Ethylbenzene	HAP/VOC	1.00%	1.0%	0.12	0.17	6.07E-05
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	6.23	2.25E-03
														HAP	3.54	1.27E-03
														TAP	2.53	9.11E-04
														PM <sub>10</sub>	1.77	6.37E-04
														PM <sub>2.5</sub>	3.54	4.25E-04
														Controlled Emissions	lb/hr	ton/yr
														VOC	6.23	2.25E-03
														HAP	3.54	1.27E-03
														TAP	2.53	9.11E-04
														PM <sub>10</sub>	0.008	2.93E-06
														PM <sub>2.5</sub>	0.016	1.95E-06

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency¹	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponent	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
13	10P20-44B	Epoxy Primer	1.39	22.50	30%	99.54%	1.447	12.08	100%	strontium chromate	HAP/PM₂.₅	25.00%	25.0%	3.02	2.93	0.024
										bisphenol-A-(epichlorhydrin); epoxy resin	PM₂.₅	20.00%	20.0%	2.42	3.35	0.027
										heptan-2-one	TAP/VOC	20.00%	20.0%	2.42	2.35	0.027
										crystalline silica, respirable powder	PM₁₀	20.00%	20.0%	2.42	2.35	0.027
										4-methylpentan-2-one	HAP/VOC	10.00%	10.0%	1.21	1.68	0.014
										Phenol, polymer with formaldehyde, glycidyl ether	VOC	10.00%	10.0%	1.21	1.68	0.014
										titanium dioxide	PM₂.₅	10.00%	10.0%	1.21	1.17	0.014
										silicon dioxide	PM₂.₅	5.00%	5.0%	0.60	0.84	6.80E-03
										2,2-bis(acryloyloxymethyl)butyl acrylate	VOC	3.00%	3.0%	0.36	0.35	4.08E-03
										Glycidyl ether of castor oil, low vis. polyepoxide resin	VOC	3.00%	3.0%	0.36	0.50	4.08E-03
										xylene	HAP/VOC	3.00%	3.0%	0.36	0.50	4.08E-03
										toluene	HAP/VOC	1.00%	1.0%	0.12	0.17	1.36E-03
										barium chromate	PM₁₀	1.00%	1.0%	0.12	0.17	1.36E-03
										ethylbenzene	HAP/VOC	1.00%	1.0%	0.12	0.12	9.51E-04
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	7.34	0.069
														HAP	5.39	0.044
														TAP	2.35	0.027
														PM₁₀	2.51	0.029
														PM₂.₅	5.36	0.048
														Controlled Emissions	lb/hr	ton/yr
														VOC	7.34	0.069
														HAP	5.39	0.044
														TAP	2.35	0.03
PM₁₀	0.012	1.31E-04														
PM₂.₅	0.025	2.19E-04														

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

\*Antimony Nickel Titanium Oxide Yellow is comprised of several metals. The emissions are multiplied by the wt% of metal (nickel & antimony) in the composition.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency¹	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponent	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
14	S66-22R	Hardener	1.39	5.28	30%	99.54%	0.955	7.96	100%	n-butyl acetate	TAP/VOC	75.00%	75.0%	5.97	5.79	0.011
										Hexamethylene diisocyanate, oligomers	HAP/VOC	35.00%	35.0%	2.78	3.86	7.35E-03
										2-methoxy-1-methylethyl acetate	VOC	10.00%	10.0%	0.80	0.77	2.10E-03
										xylene	HAP/VOC	12.50%	12.5%	0.99	0.97	2.63E-03
										ethylbenzene	HAP/VOC	25.00%	25.0%	1.99	2.76	5.25E-03
										hexamethylene-diisocyanate	HAP/VOC	1.00%	1.0%	0.080	0.077	1.47E-04
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	14.23	0.028
														HAP	7.66	0.015
														TAP	5.79	0.011
														PM₁₀	-	-
														PM₂.₅	-	-
														Controlled Emissions	lb/hr	ton/yr
														VOC	14.23	0.028
														HAP	7.66	0.015
TAP	5.79	0.011														
PM₁₀	-	-														
PM₂.₅	-	-														

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

\*Antimony Nickel Titanium Oxide Yellow is comprised of several metals. The emissions are multiplied by the wt% of metal (nickel & antimony) in the composition.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency¹	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponent	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
15	C25-90S	Thinner	1.39	2.64	30%	99.54%	0.85	7.09	100%	butanone	VOC	50.00%	50.0%	3.55	3.44	3.28E-03
										2-methoxy-1-methylethyl acetate	VOC	50.00%	50.0%	3.55	4.92	4.68E-03
										Isopropyl alcohol	TAP/VOC	20.00%	20.0%	1.42	1.38	1.87E-03
										4-methylpentan-2-one	HAP/VOC	20.00%	20.0%	1.42	1.97	1.87E-03
										2-methoxypropyl acetate	VOC	0.30%	0.3%	0.02	0.021	1.97E-05
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	11.72	0.012
														HAP	1.97	1.87E-03
														TAP	1.38	1.87E-03
														PM₁₀	-	-
														PM₂.₅	-	-
														Controlled Emissions	lb/hr	ton/yr
														VOC	11.72	0.012
														HAP	1.97	1.87E-03
														TAP	1.38	1.87E-03
														PM₁₀	-	-
														PM₂.₅	-	-

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

\*Antimony Nickel Titanium Oxide Yellow is comprised of several metals. The emissions are multiplied by the wt% of metal (nickel & antimony) in the composition.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponent	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
16	AXPG-6-C1	Polyerethane Topcoat	1.39	2.40	30%	99.54%	0.98	8.16	100%	XYLENE(PURE)	HAP/VOC	20.00%	20.0%	1.63	1.59	1.37E-03
										METHYL AMYL KETONE	TAP/VOC	20.00%	20.0%	1.63	1.59	1.37E-03
										ETHYL ACETATE	TAP/VOC	10.00%	10.0%	0.82	0.79	6.86E-04
										BUTYL ACETATE	TAP/VOC	5.00%	5.0%	0.41	0.40	3.43E-04
										TOLUENE	HAP/VOC	5.00%	5.0%	0.41	0.40	4.90E-04
										ETHYLBENZENE	HAP/VOC	5.00%	5.0%	0.41	0.57	4.90E-04
										METHYL ISOBUTYL KETONE	VOC	1.00%	1.0%	0.08	0.079	6.86E-05
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	5.40	4.82E-03
														HAP	2.55	2.35E-03
														TAP	2.77	2.40E-03
														PM <sub>10</sub>	-	-
														PM <sub>2.5</sub>	-	-
														Controlled Emissions	lb/hr	ton/yr
														VOC	5.40	4.820E-03
														HAP	2.55	2.35E-03
														TAP	2.77	2.40E-03
														PM <sub>10</sub>	-	-
														PM <sub>2.5</sub>	-	-

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

\*Antimony Nickel Titanium Oxide Yellow is comprised of several metals. The emissions are multiplied by the wt% of metal (nickel & antimony) in the composition.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
17	CA8201 FS # 17875	White MIL Paint	1.39	1.00	30%	99.54%	1.45	12.10	100%	titanium dioxide	PM <sub>2.5</sub>	50.00%	50.0%	6.05	5.87	2.12E-03
										heptan-2-one	TAP/VOC	17.00%	17.0%	2.06	2.00	7.20E-04
										xylene	HAP/VOC	3.00%	3.0%	0.36	0.50	1.82E-04
										pentan-2-one	TAP/VOC	1.20%	1.2%	0.15	0.20	7.26E-05
										aluminium hydroxide	PM <sub>2.5</sub>	5.00%	5.0%	0.61	0.84	3.03E-04
										toluene	HAP/VOC	1.00%	1.0%	0.12	0.17	6.05E-05
										ethylbenzene	HAP/VOC	1.00%	1.0%	0.12	0.17	6.05E-05
										propyldynitrimethanol	VOC	1.00%	1.0%	0.12	0.17	6.05E-05
										4-methylpentan-2-one	HAP/VOC	1.00%	1.0%	0.12	0.17	6.05E-05
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	4.21	1.52E-03
														HAP	2.22	7.99E-04
														TAP	2.20	7.93E-04
														PM <sub>10</sub>	-	-
														PM <sub>2.5</sub>	5.87	2.12E-03
														Controlled Emissions	lb/hr	ton/yr
														VOC	4.21	1.52E-03
														HAP	2.22	7.99E-04
														TAP	2.20	7.93E-04
														PM <sub>10</sub>	-	-
														PM <sub>2.5</sub>	0.027	9.74E-06

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)
18	AERODUR SG Aluminum	Aluminum Topcoat	1.39	1.06	30%	99.54%	1.155	9.64	100%	2-methoxy-1-methylethyl acetate	VOC	35.00%	35.0%	3.37	3.28	1.25E-03
										Aluminum powder (stabilized)	TAP/PM <sub>10</sub>	15.00%	15.0%	1.45	1.40	5.36E-04
										Naphtha (petroleum), hydrotreated heavy	TAP/VOC	5.00%	5.0%	0.48	0.67	2.55E-04
										Solvent naphtha (petroleum), light arom.	TAP/VOC	5.00%	5.0%	0.48	0.67	2.55E-04
										butanone	VOC	5.00%	5.0%	0.48	0.67	2.55E-04
Speciated Emissions														Uncontrolled Emissions	lb/hr	ton/yr
														VOC	5.28	2.02E-03
														HAP	-	-
														TAP	2.74	1.05E-03
														PM <sub>10</sub>	1.40	5.36E-04
														PM <sub>2.5</sub>	-	-
														Controlled Emissions	lb/hr	ton/yr
														VOC	5.28	2.02E-03
														HAP	-	-
														TAP	1.34	5.13E-04
														PM <sub>10</sub>	6.46E-03	2.47E-06
														PM <sub>2.5</sub>	-	-

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.

Paint No.	Chemical	Nomenclature	Paint Consumption (gal/hr)	Paint Consumption (gal/yr)	Transfer Efficiency <sup>1</sup>	PM Control Efficiency	Relative Density	Density (lb/gal)	Component Percentage	Subcomponents	Subcomponent Classification	Subcomponent Percentage	Percentage of Mixture	Density of Components (lb/gal)	Emissions (lb/hr)	Emissions (ton/yr)	
19	Xylan	Teflon	0.95	7.50	0.30	99.54%	1.02	8.49	100%	bisphenol-A-(epichlorohydrin) epoxy resin	PM <sub>2.5</sub>	50.00%	50.0%	4.25	0.019	7.33E-05	
										2-methoxy-1-methylethyl acetate	VOC	15.00%	15.0%	1.27	0.85	3.34E-03	
										Solvent naphtha(petroleum), heavy arom.	TAP/VOC	10.00%	10.0%	0.85	0.57	2.23E-03	
										2-butoxyethanol	TAP VOC	10.00%	10.0%	0.85	0.81	3.19E-03	
										4-hydroxy-4-methylpentan-2-one	TAP/VOC	10.00%	10.0%	0.85	0.81	3.19E-03	
										1-methoxy-2-propanol	VOC	15.00%	15.0%	1.27	1.21	4.78E-03	
										4-methylpentan-2-ol	VOC	25.00%	25.0%	2.12	2.02	7.96E-03	
										propan-1-ol	VOC	5.00%	5.0%	0.42	0.28	1.11E-03	
										xylene	HAP/VOC	5.00%	5.0%	0.42	0.40	1.59E-03	
										naphthalene	HAP/VOC	2.50%	2.5%	0.21	0.20	7.96E-04	
										phthalic anhydride	HAP/VOC	1.00%	1.0%	0.08	0.081	3.19E-04	
															Uncontrolled Emissions	lb/hr	ton/yr
															VOC	7.23	0.029
															HAP	0.69	2.71E-03
															TAP	2.18	8.60E-03
															PM <sub>10</sub>	-	-
															PM <sub>2.5</sub>	0.019	7.33E-05
															Controlled Emissions	lb/hr	ton/yr
															VOC	7.23	0.029
															HAP	0.69	2.71E-03
															TAP	2.18	8.60E-03
															PM <sub>10</sub>	-	-
															PM <sub>2.5</sub>	8.55E-05	3.37E-07
Speciated Emissions																	

Note: All Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) are included in the lb/hr and ton/yr Volatile Organic Compound (VOC) emissions as both HAPs and TAPs are also considered VOCs.

<sup>1</sup> The paint transfer efficiency is assumed to be 30% for non-volatile species (i.e. particulates). Volatile subcomponents are conservatively assumed to have a transfer efficiency of 0%.



# Section 6.a

## Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

**Title V (20.2.70 NMAC), Minor NSR (20.2.72 NMAC), and PSD (20.2.74 NMAC)** applicants must estimate and report greenhouse gas (GHG) emissions to verify the emission rates reported in the public notice, determine applicability to 40 CFR 60 Subparts, and to evaluate Prevention of Significant Deterioration (PSD) applicability. GHG emissions that are subject to air permit regulations consist of the sum of an aggregate group of these six greenhouse gases: carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>).

### Calculating GHG Emissions:

1. Calculate the ton per year (tpy) GHG mass emissions and GHG CO<sub>2</sub>e emissions from your facility.
2. GHG mass emissions are the sum of the total annual tons of greenhouse gases without adjusting with the global warming potentials (GWPs). GHG CO<sub>2</sub>e emissions are the sum of the mass emissions of each individual GHG multiplied by its GWP found in Table A-1 in 40 CFR 98 Mandatory Greenhouse Gas Reporting.
3. Emissions from routine or predictable start up, shut down, and maintenance must be included.
4. Report GHG mass and GHG CO<sub>2</sub>e emissions in Table 2-P of this application. Emissions are reported in **short** tons per year and represent each emission unit's Potential to Emit (PTE).
5. All Title V major sources, PSD major sources, and all power plants, whether major or not, must calculate and report GHG mass and CO<sub>2</sub>e emissions for each unit in Table 2-P.
6. For minor source facilities that are not power plants, are not Title V, and are not PSD there are three options for reporting GHGs in Table 2-P: 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHGs as a second separate unit; 3) or check the following ☐ By checking this box, the applicant acknowledges the total CO<sub>2</sub>e emissions are less than 75,000 tons per year.

### Sources for Calculating GHG Emissions:

- Manufacturer's Data
- AP-42 Compilation of Air Pollutant Emission Factors at <http://www.epa.gov/ttn/chief/ap42/index.html>
- EPA's Internet emission factor database WebFIRE at <http://cfpub.epa.gov/webfire/>
- 40 CFR 98 Mandatory Green House Gas Reporting except that tons should be reported in short tons rather than in metric tons for the purpose of PSD applicability.
- API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry. August 2009 or most recent version.
- Sources listed on EPA's NSR Resources for Estimating GHG Emissions at <http://www.epa.gov/nsr/clean-air-act-permitting-greenhouse-gases>:

### Global Warming Potentials (GWP):

Applicants must use the Global Warming Potentials codified in Table A-1 of the most recent version of 40 CFR 98 Mandatory Greenhouse Gas Reporting. The GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to that of one unit mass of CO<sub>2</sub> over a specified time period.

"Greenhouse gas" for the purpose of air permit regulations is defined as the aggregate group of the following six gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. **(20.2.70.7 NMAC, 20.2.74.7 NMAC)**. You may also find GHGs defined in 40 CFR 86.1818-12(a).

### Metric to Short Ton Conversion:

Short tons for GHGs and other regulated pollutants are the standard unit of measure for PSD and title V permitting programs. 40 CFR 98 Mandatory Greenhouse Reporting requires metric tons.

1 metric ton = 1.10231 short tons (per Table A-2 to Subpart A of Part 98 – Units of Measure Conversions)

# Section 7

## Information Used to Determine Emissions

**Information Used to Determine Emissions** shall include the following:

- ☒ If manufacturer data are used, include specifications for emissions units and control equipment, including control efficiencies specifications and sufficient engineering data for verification of control equipment operation, including design drawings, test reports, and design parameters that affect normal operation.
- ☐ If test data are used, include a copy of the complete test report. If the test data are for an emissions unit other than the one being permitted, the emission units must be identical. Test data may not be used if any difference in operating conditions of the unit being permitted and the unit represented in the test report significantly effect emission rates.
- ☒ If the most current copy of AP-42 is used, reference the section and date located at the bottom of the page. Include a copy of the page containing the emissions factors, and clearly mark the factors used in the calculations.
- ☐ If an older version of AP-42 is used, include a complete copy of the section.
- ☒ If an EPA document or other material is referenced, include a complete copy.
- ☐ Fuel specifications sheet.
- ☐ If computer models are used to estimate emissions, include an input summary (if available) and a detailed report, and a disk containing the input file(s) used to run the model. For tank-flashing emissions, include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., permit or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.

### Unit PAINT-1 & PAINT-3 – Paint Booths

- Paint Gun Specification
- Paint Filters Specification
- Transfer Efficiency assumed from “Pollution Prevention Opportunity Data Sheet”
- Paint and Solvent SDS
- Note: PAINT-1 uses Paint No. 1 through 12. PAINT-3 only uses Paint No. 13

Paint No.	Chemical	Nomenclature
1	515K011	Green Primer
2	AXPG-6-Y26	Yellow Topcoat
3	ECL-G-101	707 Gray
4	AXPF-6-BLK	Black
5	AXPF-6-OR2	Orange Topcoat
6	AXPG-6-W9	White Topcoat
7	AXPG-6-C30	Aluminum Topcoat
8	463-12-8	Green Primer
9	AXTS-1-GIQ	Gray Teflon
10	AXPG-6-R64	Red Topcoat
11	AXPG-6-W28	White Topcoat
12	AXPG-6-Y1	Yellow Topcoat
13	Xylan	Teflon

**Units TANK-22, TANK-27, FUG-22, FUG-27, TANK-15, FUG-15, TANK-7, FUG-7, TANK-10, FUG-10 – Process Plating Tank**

- TCEQ Guidance Package – Chromium Plating & Anodizing Operation using Chromic Acid.
- Plating Tank Specification
- Cadmium (LHE & Bright) Process Line – Solution Matrix
- Chemfilm & Chromate Process Line - Solution Matrix

**Unit Tank-13, FUG-13 – Hydrochloric (HCl) Acid Tank**

- TCEQ Guidance Package – Chromium Plating & Anodizing Operation using Chromic Acid.
- Cadmium (LHE & Bright) Process Line – Solution Matrix
- Chemfilm & Chromate Process Line - Solution Matrix
- Methods for Estimating Air Emissions from Chemical Manufacture Facilities.
- Perry's Chemical Engineering Handbook; 8th Edition using table 2-11: Partial Pressures of Water over Aqueous
- Solution of HCl and table 2-12 Partial Pressure of HCL over Aqueous Solutions of HCl.
- Acid Tank Specification

**Unit Tank-20, FUG-20, Tank-24, FUG-24 – Nitric Acid Tank**

- TCEQ Guidance Package – Chromium Plating & Anodizing Operation using Chromic Acid.
- Methods for Estimating Air Emissions from Chemical Manufacture Facilities.
- Perry's Chemical Engineering Handbook; 8th Edition using table 2-18 Partial Pressures of HNO<sub>3</sub> and H<sub>2</sub>O over
- Aqueous Solution of HNO<sub>3</sub>
- Acid Tank Specification
- Chromium Plating & Anodizing Operation using Chromic Acid (10/2007).
- Cadmium (LHE & Bright) Process Line – Solution Matrix
- Chemfilm & Chromate Process Line - Solution Matrix

**Unit HTR-1 – Paint Booth Heater**

- AP-42 Table 1.5-1: Emission Factors for LPG Combustion.
- Heater Specification

# INSTRUCTION MANUAL

## HVLP Compliant Spray gun Low Volume Low Pressure LPH-80

### Important

This manual contains IMPORTANT WARNINGS and INSTRUCTIONS. Equipment in this manual is exclusively for painting purposes. Do not use for other purposes. The operator shall be fully conversant with the requirements stated in this instruction manual including important warnings, cautions and operation and correct handling. Read and understand the instruction manual, before use and retain for reference.

CE II 2G X

This Anest-iwata spray gun kit complies to ATEX regulations 94/9/EC,  
Protection level :  
II 2 G X, Suitable for use in Zones 1 and 2.  
X marking :  
Any static electricity discharge from the spray gun is to be diverted to the grounded the conductive air hose as stipulated.

Be sure to observe warnings and cautions in this instruction manual.  
If not, it can cause paint ejection and serious bodily injury by drawing organic solvent.  
Be sure to observe following ⚠ marked items which are especially important.

<b>⚠ WARNING</b>	Indicates a potentially hazardous situation which, if not avoided, may result in serious injury or loss of life.
<b>⚠ CAUTION</b>	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.
<b>Important</b>	Indicates notes which we ask you to observe. The safety precautions in this instruction manual are the minimum necessary conditions. Follow national and local regulations regarding fire prevention, electricity and safety as well as your own company regulations.

### Important specifications

Max. Pressure	0.68 MPa / 6.8 bar / 98 PSI
Noise level	60.3 dB (A)
Spray condition	Recommended
Measuring point	1m backwards from gun, 1.6 m height
Max. Temperature	
Atmosphere	5°C~40°C
Air • Fluid	5°C~43°C

### Main specifications

Model	Type of feed	Nozzle orifice ϕ mm (in)	Air cap Set Mark	Recommended conditio					Air & fluid connection	Mass g (lbs)
				※1 Atomizing air pressure MPa (bar /PSI)	Air pressure inside air cap MPa (bar /PSI)	※2 Fluid output ml/min	Air consumption l/min (cfm)	※2 Pattern width mm (in)		
LPH-80-042G	Gravity	0.4(0.016)	E2	0.09 (0.9/ 13)	0.07 (0.7 /10)	8	50 (1.8)	40(1.6)	Air G1/4 (NPS1/4)  Fluid G1/8	205 (0.45)
-062G		0.6(0.024)				25		60(2.4)		
-082G		0.8(0.032)				45		80(3.2)		
-102G		1.0(0.039)				55		100(3.9)		
-122G		1.2(0.047)				80		120(4.7)		
-044G		0.4(0.016)	E4	0.10 (1.0/ 14)		10	60 (2.2)	55(2.1)		
-064G		0.6(0.024)				30		80(3.1)		
-084G		0.8(0.032)				45		100(3.9)		
-104G		1.0(0.039)				60		130(5.1)		
-124G		1.2(0.047)			75		140(5.5)			

※1. Atomizing air pressure means air pressure at gun inlet when trigger is pulled and air flows.

※2. Tested with 16sec / Ford cup #4 automotive repair paint.

# Viskon-Aire\*

## Air Filter Products

### PAINT ARRESTANCE FILTER TEST REPORT

#### Spray Removal Efficiency & Paint Holding Capacity

#### BASED ON 40 CFR PART 63 (HHHHHH) NATIONAL EMISSION STANDARD

Tested for: Viskon-Aire Corp.  
Filter Mfr.: AAF International  
Filter Name: 18 Gram Fiberglass Paint Arrestor (107X)  
Test No. 13-1100  
Report Date: August 9, 2013

#### Test Information

##### **FILTER DESCRIPTION:**

18gsf PA Media-Blue Tint on ALS (20" x 20" x 2.5")

##### **PAINT DESCRIPTION:**

S.W. G78 WC216

##### **PAINT SPRAY METHOD:**

Binks 95 Automatic Spray Gun

##### **SPRAY FEED RATE:**

136 gr./min.

##### **AIR VELOCITY:**

150 FPM

#### Test Results

##### **INITIAL PRESSURE DROP of Clean Test Filter**

0.04 in. water

##### **FINAL PRESSURE DROP of Loaded Test Filter**

0.15 in. water

##### **PAINT HOLDING CAPACITY of TEST FILTER**

1663.2 grams

##### **PAINT RUN-OFF**

1587.6 grams

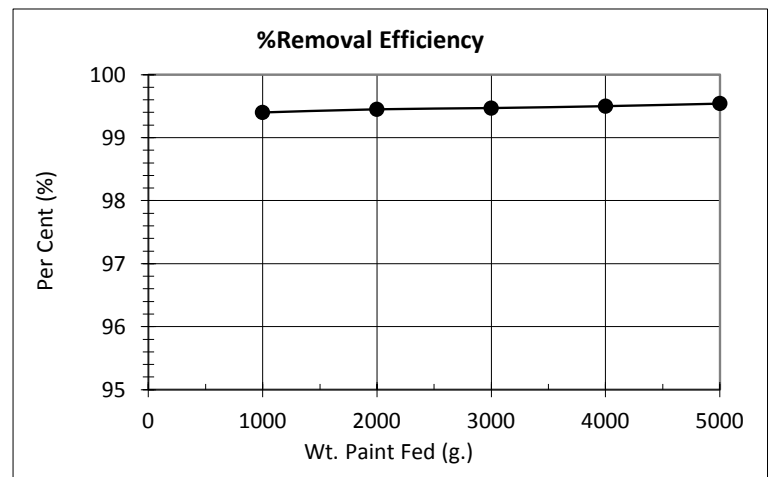
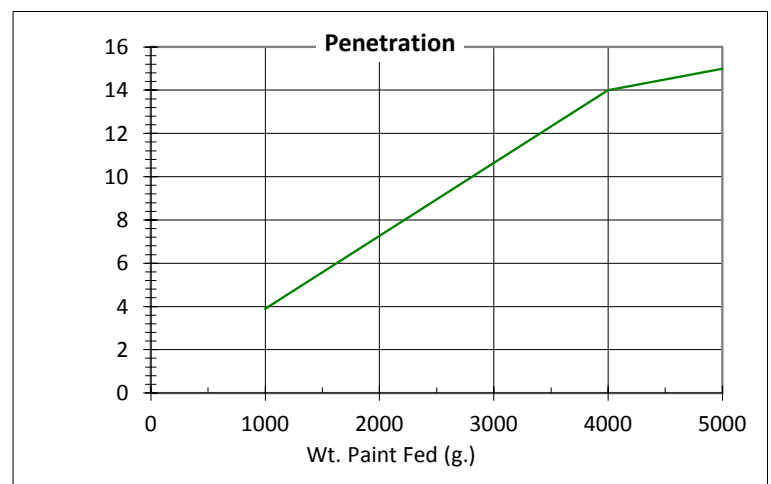
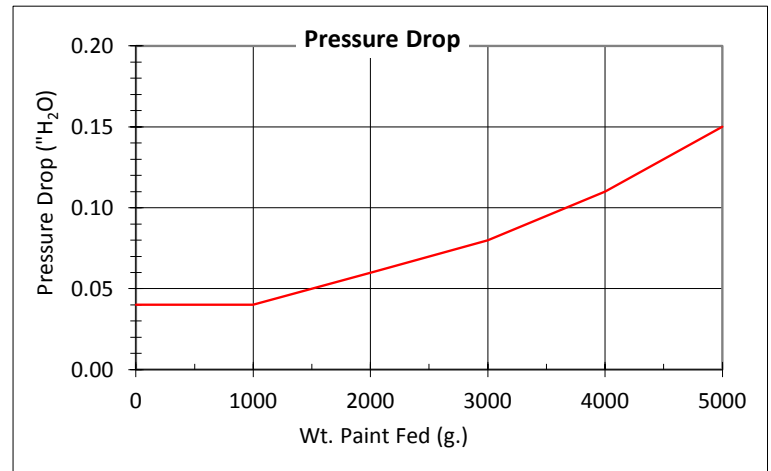
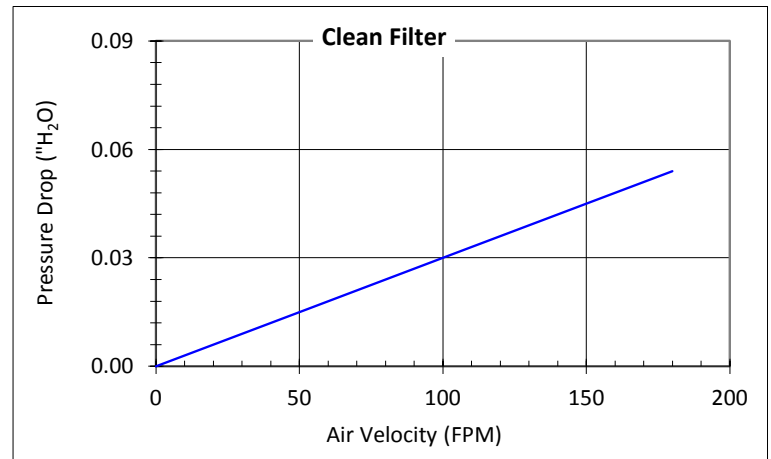
##### **WEIGHT GAIN on FINAL FILTER**

15 grams = penetration

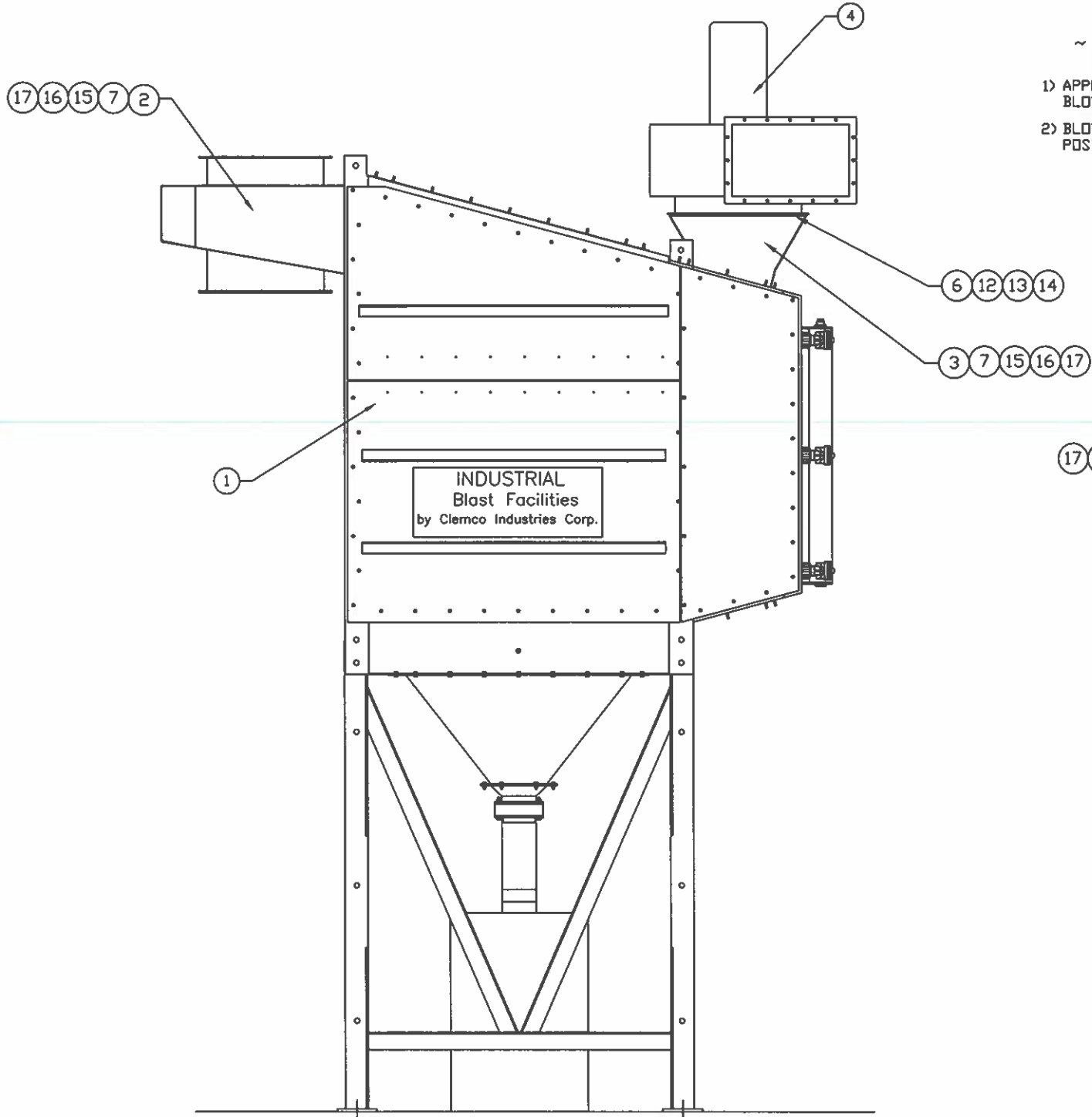
##### **AVERAGE REMOVAL EFFICIENCY of TEST FILTER**

99.54 %

Test Engineer: RAS



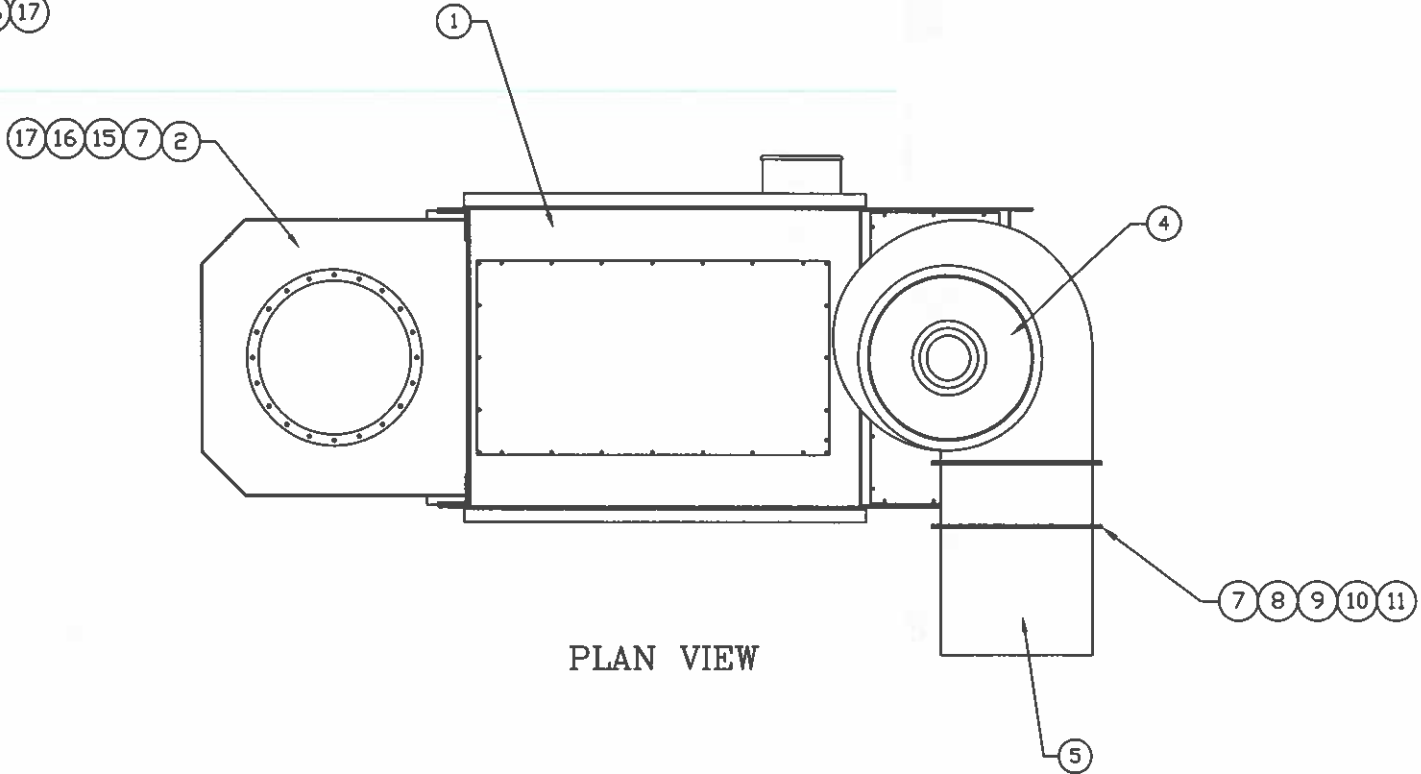
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~ NOTES ~

- 1) APPLY ITEM 7, TO BLOWER FLANGE PRIOR TO MOUNTING BLOWER TO ITEM 3.  
2) BLOWER MAY BE ROTATED 90 DEG'S (CCW), FROM THE POSITION SHOWN IN PLAN VIEW.

ITEM	STOCK NO.	DESCRIPTION	WT.	CUT SIZE or DWG. NO.	QUAN.
1	61267	CDF-6 DUST COLLECTOR		B61267	1
2	27016	ABRASIVE INLET-CDF COLLECTOR		B27016	1
3	27005	SIZE 18 EXHAUST ADAPTOR-CDF		B27005	1
4	61890	FAN/DAMPER, SIZE 18, 6000cfm @9.5", 15HP		S61890	1
5	61892	DAMPER EXTENSION WELDMENT		S61892	1
6	06105	MASTIC SEAL (UM/FT)		S06105	7
7	00187	WEATHER STRIPPING (UM/FT)		S00187	25.6
8	03253	3/8NC x 1.25LG. HEX HD BOLT		S03253	20
9	03317	3/8 DIA. F. WASHER		S03317	40
10	03318	3/8 DIA. L. WASHER		S03318	20
11	03311	3/8NC REG HEX NUT		S03311	20
12	03515	1/2 DIA. F. WASHER		S03515	16
13	03516	1/2 DIA. L. WASHER		S03516	16
14	03511	1/2NC REG HEX NUT		S03511	16
15	03216	5/16 DIA. F. WASHER		S03216	36
16	03217	5/16 DIA. L. WASHER		S03217	36
17	03211	5/16NC REG HEX NUT		S03211	36



PLAN VIEW

NO.	DATE	ECN. NO.	REVISION	BY	APPD
0			ISSUE		

TOLERANCE NOTES: UNLESS OTHERWISE SPECIFIED.

TOLERANCES	TOLERANCE LEVELS		
	LEVEL 1	LEVEL 2	LEVEL 3
FRACTIONS	± 1/8	± 1/16	± 1/32
.XX	± 0.06	± 0.03	± 0.01
.XXX	± 0.031	± 0.015	± 0.005
ANGLES	± 1°	± 1/2°	± 1/2°
PARALLELISM		0.015 TIR	0.002 TIR
CONCENTRICITY		0.005 TIR	0.002 TIR
OUT OF ROUND		0.005 TIR	0.002 TIR
OUT OF SQUARE		0.015	0.002
HOLE SIZE	+ 1/16 - 0.000	+ 1/32 - 0.000	+ 0.010 - 0.000

DO NOT SCALE DWG.

GENERAL NOTES:

1. UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES.  
2. REMOVE ALL BURRS, WELD SPLATTER, ETC. FROM WELDMENTS.  
3. ROUND ALL SHARP CORNERS AND EDGES.  
4. SURFACE FINISH 125 RMS, UNLESS OTHERWISE NOTED.  
5. THE ALLOWABLE DEVIATION IN MATERIAL THICKNESS FOR CASTING GATES, OVERFLOWS, AND PARTING LINES IS:  
PROTRUSION: 0.020 MAXIMUM  
DEPRESSION: 0.010 MAXIMUM  
6. TOLERANCES ON CAST OR MACHINED FILLETS AND CHAMFERS SHALL BE ± 0.010 AND ± 5° RESPECTIVELY.

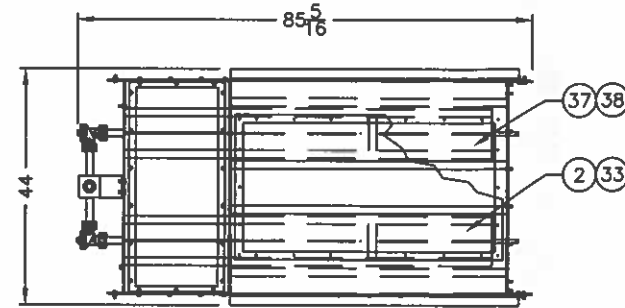
		1	
JOB NO.	CUSTOMER		QUAN.
CLEMCO INDUSTRIES			
ASSEMBLY ~ CDF-6 COLLECTOR			
DRWN. BY	DATE	USED ON	ACAD FILE/PART NO.
SPB	7-28-22		
CHKD.		TOL. LEV.	DWG. NO.
		N/A	61889
APPD.			REV. 0
		SHEET	1 OF 1

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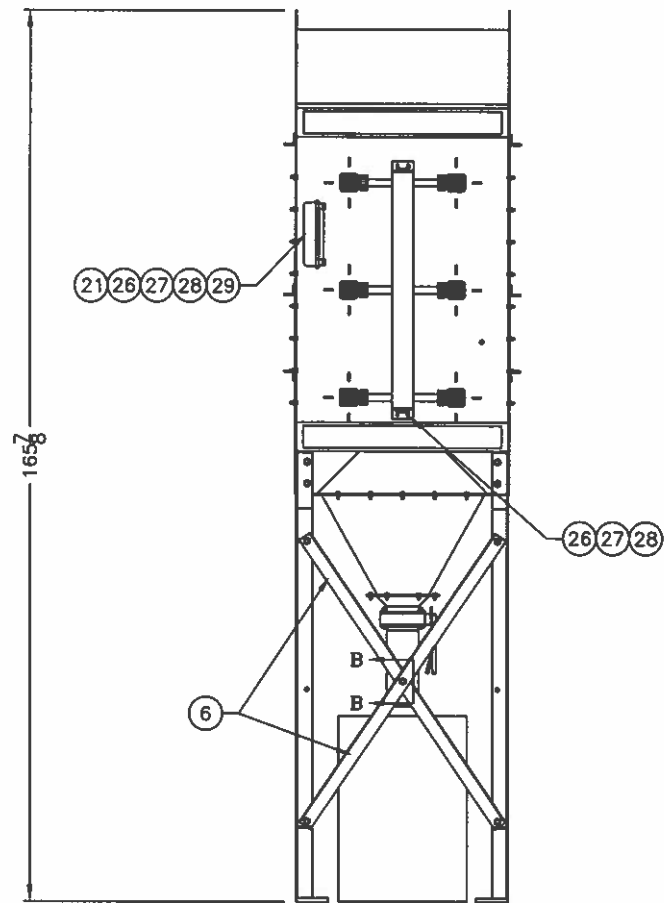
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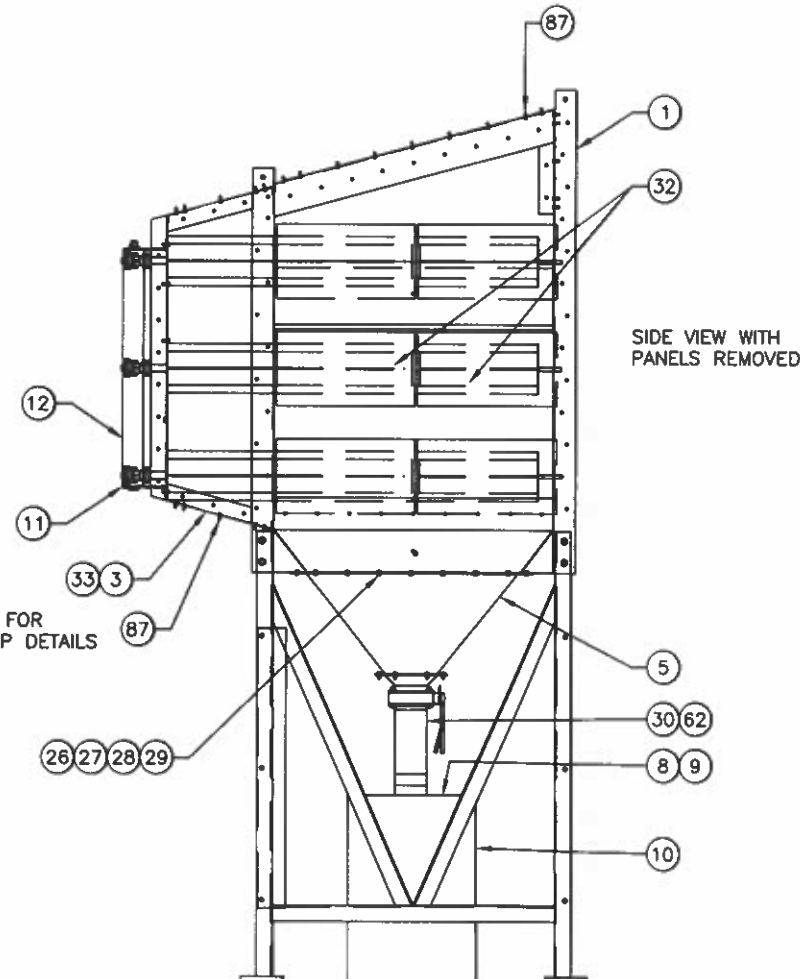
ITEM	STOCK NO.	DESCRIPTION	WT.	CUT SIZE or DWG. NO.	QUAN.
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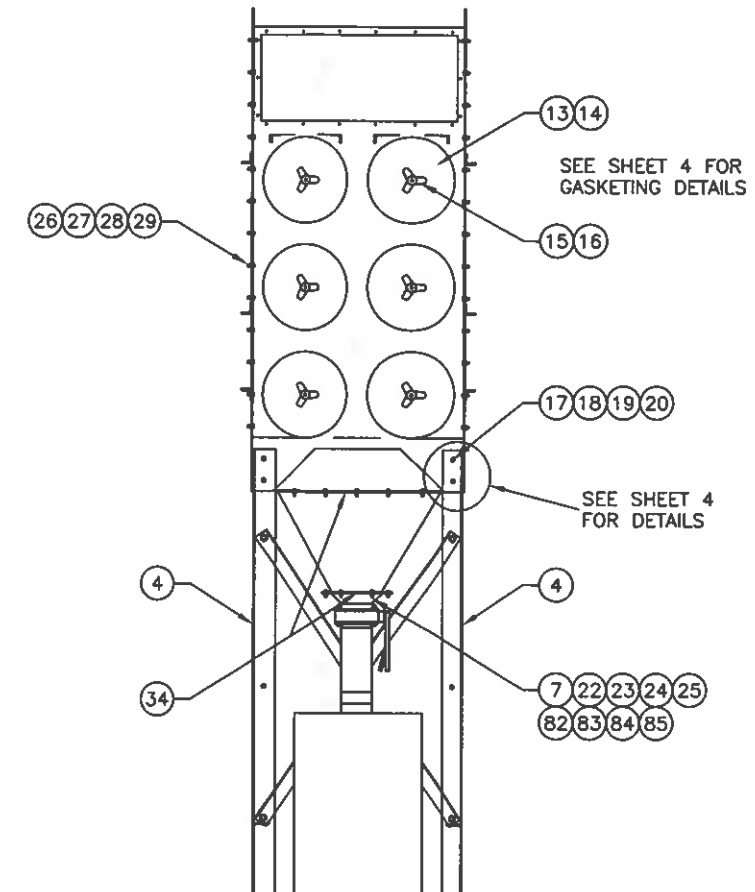
ALIGN SHIELD (ITEM 37) ON ANGLES AND INSTALL WITH SHEET METAL SCREWS



SEE SHEET 4 FOR WEATHERSTRIP DETAILS



SIDE VIEW WITH PANELS REMOVED



SEE SHEET 4 FOR GASKETING DETAILS

SEE SHEET 4 FOR DETAILS

NO.	DATE	ECN. NO.	REVISION	BY	APPD.
0	4-22-22	Z3541	ISSUE	JRH	

TOLERANCE NOTES: UNLESS OTHERWISE SPECIFIED.

TOLERANCES	TOLERANCE LEVELS		
	LEVEL 1	LEVEL 2	LEVEL 3
FRACTIONS	± 1/8	± 1/16	± 1/32
.XX	± 0.06	± 0.03	± 0.01
.XXX	± 0.031	± 0.015	± 0.005
ANGLES	± 1°	± 1/2°	± 1/4°
PARALLELISM	0.015 TIR	0.005 TIR	0.002 TIR
CONCENTRICITY	0.005 TIR	0.002 TIR	0.001 TIR
OUT OF ROUND	0.005 TIR	0.002 TIR	0.001 TIR
OUT OF SQUARE	0.015	0.005	0.002
HOLE SIZE	+ 1/16 - 0.000	+ 1/32 - 0.000	+ 0.010 - 0.000

DO NOT SCALE DWG.

GENERAL NOTES:

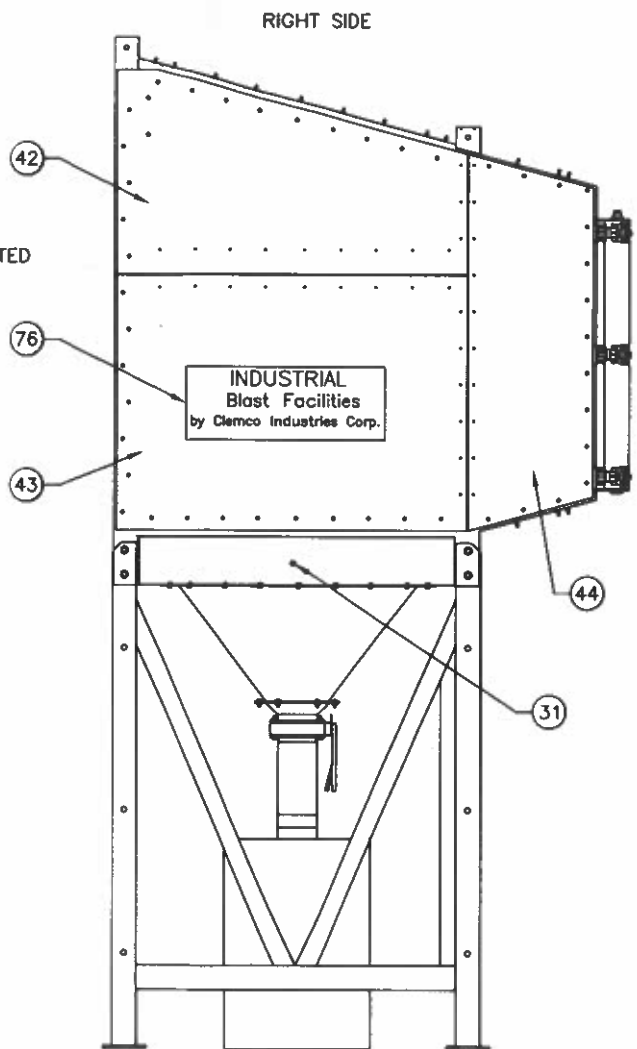
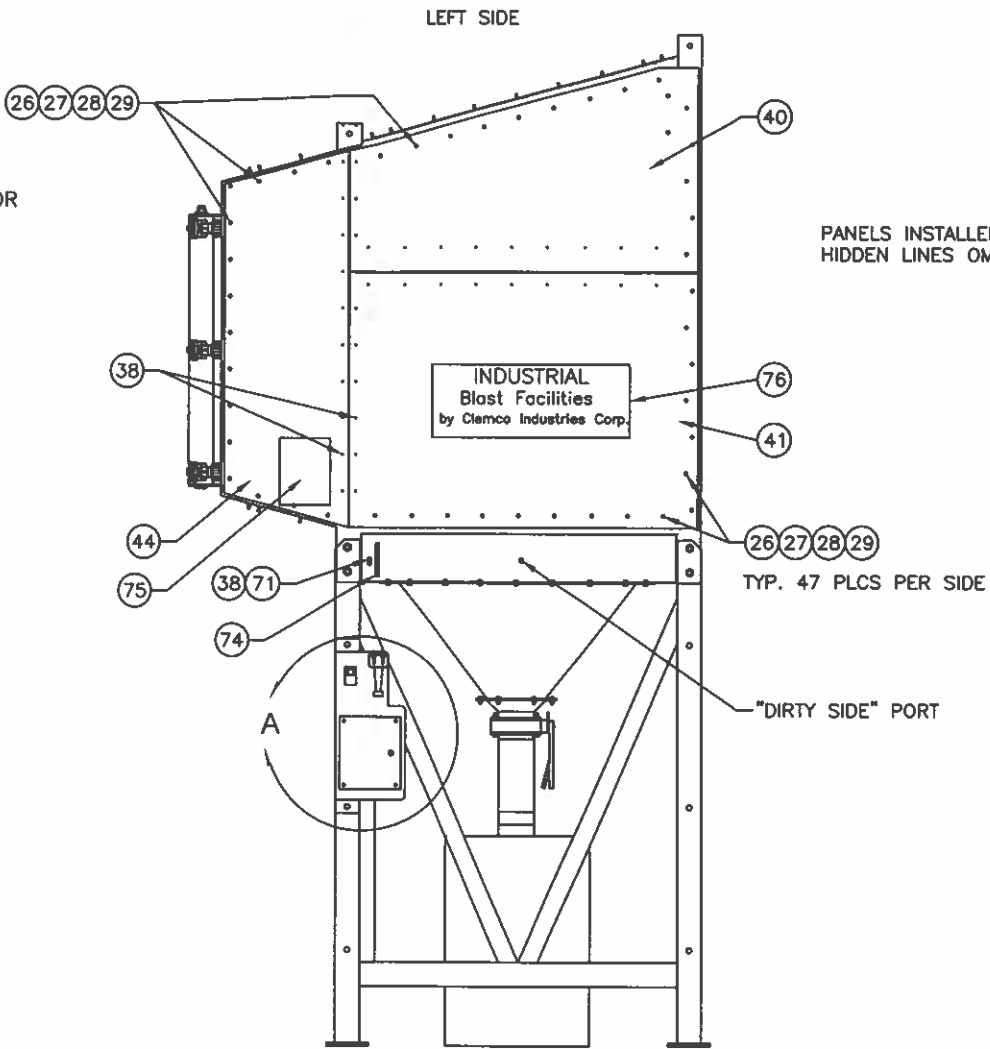
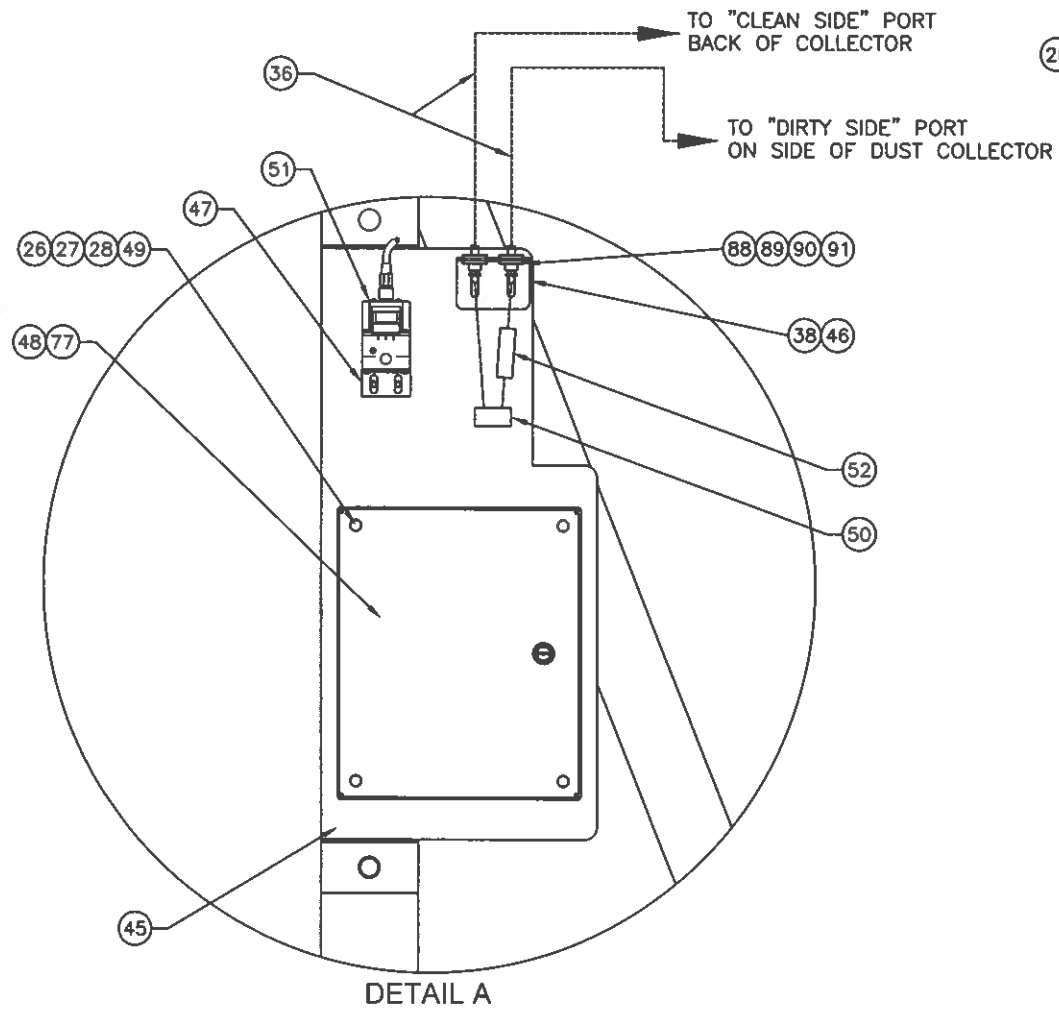
- UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES.
- REMOVE ALL BURRS, WELD SPLATTER, ETC. FROM WELDMENTS.
- ROUND ALL SHARP CORNERS AND EDGES.
- SURFACE FINISH 125 RMS, UNLESS OTHERWISE NOTED.
- THE ALLOWABLE DEVIATION IN MATERIAL THICKNESS FOR CASTING GATES, OVERFLOWS, AND PARTING LINES IS:  
PROTRUSION: 0.020 MAXIMUM  
DEPRESSION: 0.010 MAXIMUM
- TOLERANCES ON CAST OR MACHINED FILLETS AND CHAMFERS SHALL BE ± 0.010 AND ± 5° RESPECTIVELY.

JOB NO.	CUSTOMER	1
CLEMCO INDUSTRIES CORP.		
ASSEMBLY - CDF6 DUST COLLECTOR W/ PLC		
DRWN. BY JRH	DATE 4-22-22	USED ON ACAD FILE/PART NO. 61267
CHKD.	TOL. LEV. 1	DWG. NO. B61267
APPD.		REV. 0
		SHEET 2 OF 4

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ITEM	STOCK NO.	DESCRIPTION	WT.	CUT SIZE or DWG. NO.	QUAN.
------	-----------	-------------	-----	----------------------	-------



NO.	DATE	ECN. NO.	REVISION	BY	APPD.
0	4-22-22	Z3541	ISSUE	JRH	

TOLERANCE NOTES: UNLESS OTHERWISE SPECIFIED.

TOLERANCES	TOLERANCE LEVELS		
	LEVEL 1	LEVEL 2	LEVEL 3
FRACTIONS	± 1/8	± 1/16	± 1/32
.XX	± 0.06	± 0.03	± 0.01
.XXX	± 0.031	± 0.015	± 0.005
ANGLES	± 1°	± 1/2°	± 1/2°
PARALLELISM	0.015 TIR	0.002 TIR	0.002 TIR
CONCENTRICITY	0.005 TIR	0.002 TIR	0.002 TIR
OUT OF ROUND	0.005 TIR	0.002 TIR	0.002 TIR
OUT OF SQUARE	0.015	0.002	0.002
HOLE SIZE	+ 1/16 - 0.000	+ 1/32 - 0.000	+ 0.010 - 0.000

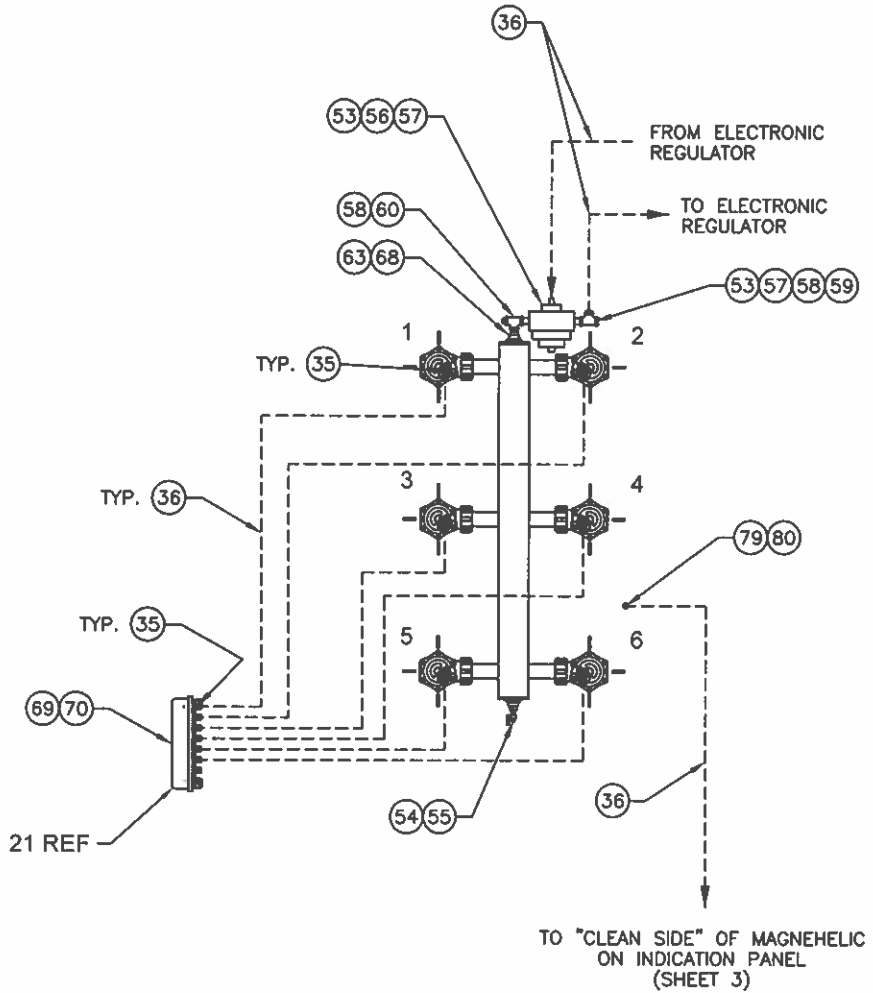
DO NOT SCALE DWG.

GENERAL NOTES:

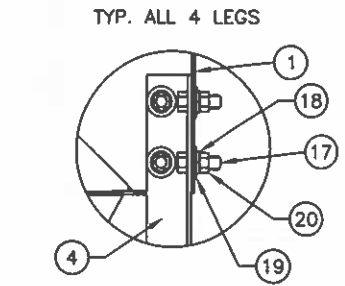
1. UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES.
2. REMOVE ALL BURRS, WELD SPLATTER, ETC. FROM WELDMENTS.
3. ROUND ALL SHARP CORNERS AND EDGES.
4. SURFACE FINISH 125 RMS, UNLESS OTHERWISE NOTED.
5. THE ALLOWABLE DEVIATION IN MATERIAL THICKNESS FOR CASTING GATES, OVERFLOWS, AND PARTING LINES IS:  
PROTRUSION: 0.020 MAXIMUM  
DEPRESSION: 0.010 MAXIMUM
6. TOLERANCES ON CAST OR MACHINED FILLETS AND CHAMFERS SHALL BE ± 0.010 AND ± 5° RESPECTIVELY.

JOB NO.	CUSTOMER	1
CLEMCO INDUSTRIES CORP.		
ASSEMBLY - CDF6 DUST COLLECTOR W/ PLC		
DRWN. BY	DATE	USED ON
JRH	4-22-22	ACAD FILE/PART NO.
CHKD.		61267
APPD.		1
DWG. NO.	REV.	QUAN.
B61267	0	1
SHEET	3	OF 4

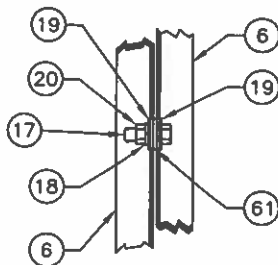
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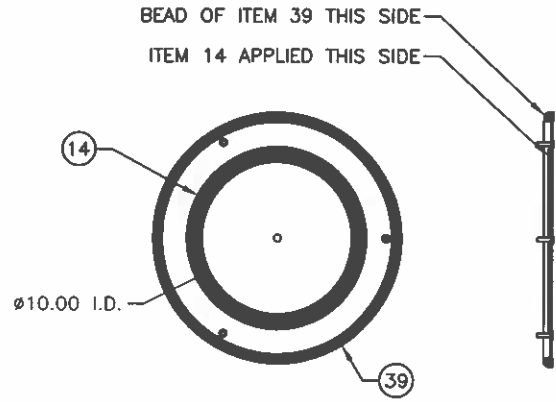
PULSE VALVE PLUMBING



LEG BOLTING DETAILS



SECTION B~B



DETAIL ITEM 13



APPLY 3/16" X 1 WEATHERSTRIP TO INSIDE OF BOLT HOLES

DETAIL ITEMS 2 & 3

NO.	DATE	ECN. NO.	REVISION	BY	APPD.
0	4-22-22	Z3541	ISSUE	JRH	

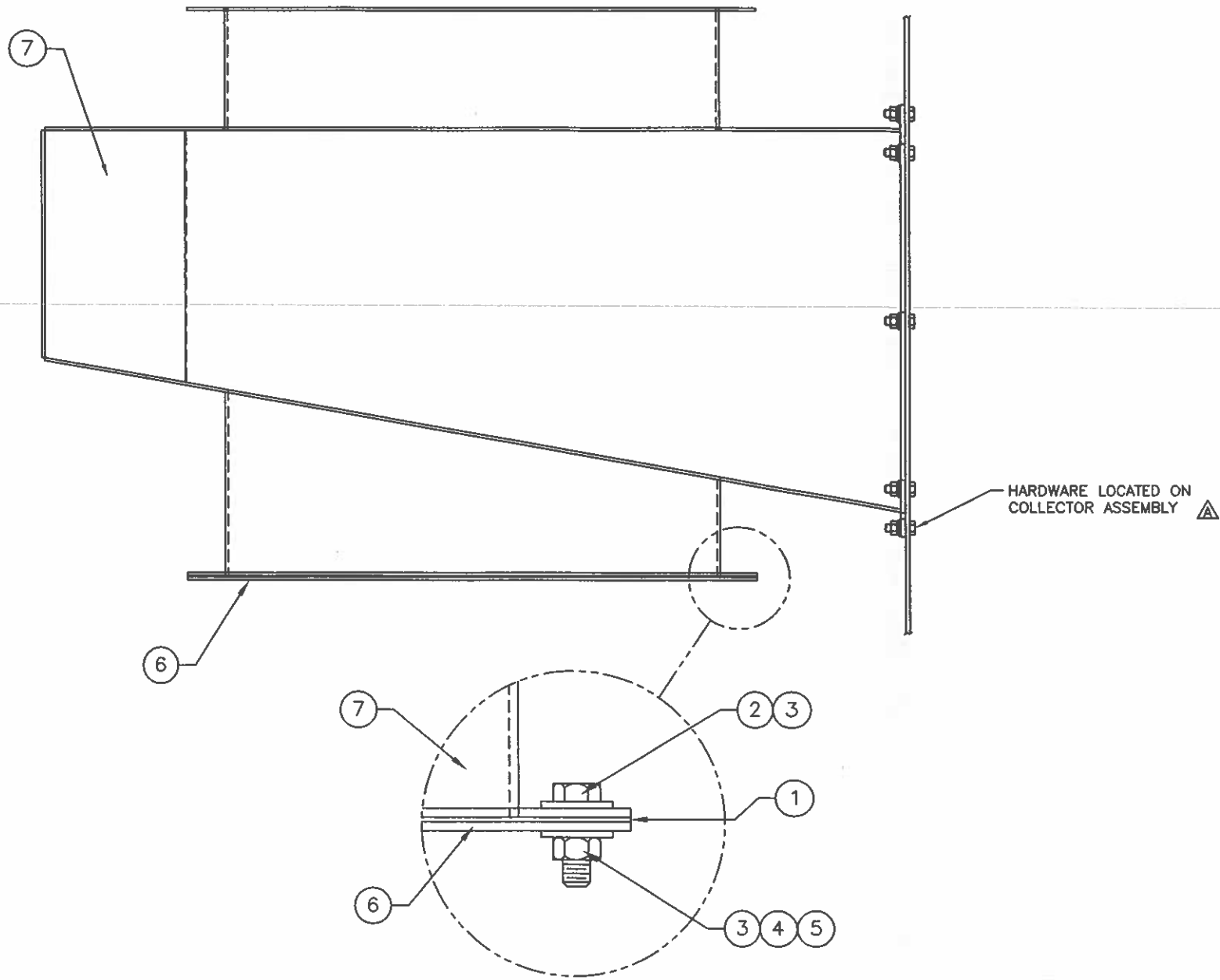
TOLERANCE NOTES: UNLESS OTHERWISE SPECIFIED.			
	TOLERANCE LEVELS		
	LEVEL 1	LEVEL 2	LEVEL 3
FRACTIONS	± 1/8	± 1/16	± 1/32
.XX	± 0.06	± 0.03	± 0.01
.XXX	± 0.031	± 0.015	± 0.005
ANGLES	± 1°	± 1/2°	± 1/2°
PARALLELISM	0.015 TIR	0.005 TIR	0.002 TIR
CONCENTRICITY	0.005 TIR	0.002 TIR	0.002 TIR
OUT OF ROUND	0.005 TIR	0.002 TIR	0.002 TIR
OUT OF SQUARE	0.015	0.002	0.002
HOLE SIZE	+ 1/16 - 0.000	+ 1/32 - 0.000	+ 0.010 - 0.000
DO NOT SCALE DWG.			

- GENERAL NOTES:
1. UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES.
  2. REMOVE ALL BURRS, WELD SPLATTER, ETC. FROM WELDMENTS.
  3. ROUND ALL SHARP CORNERS AND EDGES.
  4. SURFACE FINISH 125 RMS, UNLESS OTHERWISE NOTED.
  5. THE ALLOWABLE DEVIATION IN MATERIAL THICKNESS FOR CASTING GATES, OVERFLOWS, AND PARTING LINES IS:  
PROTRUSION: 0.020 MAXIMUM  
DEPRESSION: 0.010 MAXIMUM
  6. TOLERANCES ON CAST OR MACHINED FILLETS AND CHAMFERS SHALL BE ± 0.010 AND ± 5° RESPECTIVELY.

				1
JOB NO.	CUSTOMER			QUAN.
CLEMCO INDUSTRIES CORP.				
ASSEMBLY - CDF6 DUST COLLECTOR W/ PLC				
DRWN. BY	DATE	USED ON	ACAD FILE/PART NO.	
JRH	4-22-22		61267	
CHKD.		TOL. LEV.	DWG. NO.	REV.
		1	B61267	0
APPD.			SHEET	OF
			4	4

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ITEM	STOCK NO.	DESCRIPTION	WT.	CUT SIZE or DWG. NO.	QUAN.
1	06105	MASTIC SEAL (UM/FT)		S	16
2	03253	3/8NC X 1.25LG HEX HD BOLT		S	20
3	03317	3/8 DIA. F. WASHER		S	40
4	03318	3/8 DIA. L. WASHER		S	20
5	03311	3/8NC REG. HEX NUT		S	20
6	23772	ABRASIVE INLET WELDMENT (ITEM 10-COVER PLATE)		B23772	REF
7	23772	ABRASIVE INLET WELDMENT		B23772	1



ASSEMBLY

ORIGINAL

B	1-17-16	Z3018	ITEM 6-COVER PLATE WAS: P/N 27017, NOW: ITEM 10 UNDER P/N 23772	JRH	✓
A	1-16-12	Z2396A	ADDED ITEM 7 & PART NO. FOR ITEM 6	BL	RG
O	12-28-11	Z2396	ISSUE	BL	GS
NO.	DATE	ECN. NO.	REVISION	BY	APPD

TOLERANCE NOTES: UNLESS OTHERWISE SPECIFIED.			
TOLERANCE LEVELS			
	LEVEL 1	LEVEL 2	LEVEL 3
TOLERANCES			
FRACTIONS	± 1/8	± 1/16	± 1/32
.XX	± 0.06	± 0.03	± 0.01
.XXX	± 0.031	± 0.015	± 0.005
ANGLES	± 1°	± 1/2°	± 1/2°
PARALLELISM		0.015 TIR	0.002 TIR
CONCENTRICITY		0.005 TIR	0.002 TIR
OUT OF ROUND		0.005 TIR	0.002 TIR
OUT OF SQUARE		0.015	0.002
HOLE SIZE	+ 1/16 - 0.000	+ 1/32 - 0.000	+ 0.010 - 0.000
DO NOT SCALE DWG.			

- GENERAL NOTES:
1. UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES.
  2. REMOVE ALL BURRS, WELD SPLATTER, ETC. FROM WELDMENTS.
  3. ROUND ALL SHARP CORNERS AND EDGES.
  4. SURFACE FINISH 125 RMS, UNLESS OTHERWISE NOTED.
  5. THE ALLOWABLE DEVIATION IN MATERIAL THICKNESS FOR CASTING GATES, OVERFLOWS, AND PARTING LINES IS:  
PROTRUSION: 0.020 MAXIMUM  
DEPRESSION: 0.010 MAXIMUM
  6. TOLERANCES ON CAST OR MACHINED FILLETS AND CHAMFERS SHALL BE ± 0.010 AND ± 5° RESPECTIVELY.

JOB NO.	CUSTOMER		QUAN.
CLEMCO INDUSTRIES			
WEAR RESISTANT INLET ~ ASSEMBLY			
DRWN. BY	DATE	USED ON	ACAD FILE/PART NO.
BL	12-28-11		27016
CHKD.		TOL. LEV.	DWG. NO.
		1	B27016
APPD.			REV. B
		SHEET	1 OF 1

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This manual contains IMPORTANT WARNINGS and INSTRUCTIONS. Equipment in this manual is exclusively for painting purposes. Do not use for other purposes. The operator shall be fully conversant with the requirements stated in this instruction manual including important warnings, cautions and operation and correct handling. Read and understand the instruction manual, before use and retain for reference.

## INSTRUCTION MANUAL (For Overseas Sales)

### HVLP Compliant Spray Gun

## LPH-400-LV LOW VOLUME LOW PRESSURE



Our products are produced as per international standards ISO9001

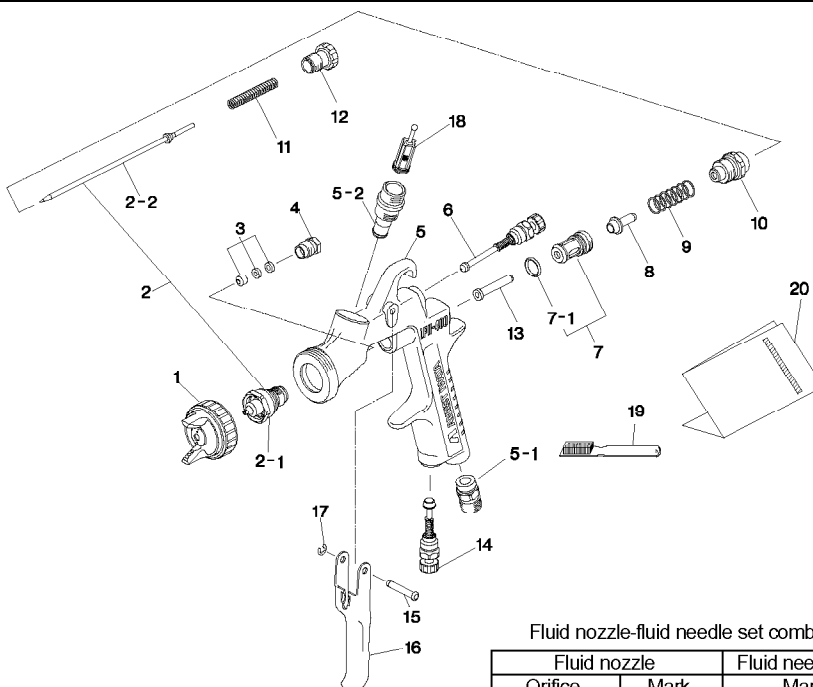
Main Specifications	Maximum Working Pressure	6.8 bar (98 PSI)
	Noise level (LAeqT)	69.4 dB(A)
	Temperature range	5~40 °C

Model	Type of feed	Nozzle orifice φ mm(in)	Air cap set	※1 Atomizing air pressure bar (PSI)	Air pressure inside air cap bar (PSI)	Fluid output ml/min	Air consumption l/min(cfm)	Pattern Width mm(in)	Weight g(lbs)
LPH-400-124LV	Gravity	1.2 (0.047)	LV4	1.1 (16)	0.7 (10)	90	270 (9.5)	260(10.2)	380(0.84)
LPH-400-134LV		1.3 (0.051)				110		280(11.0)	
LPH-400-144LV		1.4 (0.055)				130		290(11.4)	
LPH-400-154LV		1.5 (0.059)				140		295(11.6)	
LPH-400-164LV		1.6 (0.063)				150		300 (11.8)	
LPH-400-184LV		1.8 (0.071)				190		320 (12.6)	

※1. Atomizing air pressure means air pressure at gun inlet when trigger is pulled and air flows.

## PARTS LIST

No.	Description	Q'ty
1	Air cap set	1
2	Fluid nozzle-fluid needle set	1
2-1	Fluid nozzle	1
2-2	Fluid needle set	1
3	Needle packing set	1
4	Needle packing seat	1
5	Body set	1
5-1	Air nipple	1
5-2	Fluid nipple	1
6	Pattern adj. set	1
7	Air valve seat set	1
7-1	O ring	1
8	Air valve	1
9	Air valve spring	1
10	Fluid adj. guide	1
11	Fluid needle spring	1
12	Fluid adj. knob	1
13	Air valve shaft	1
14	Air adj. set	1
15	Trigger stud	1
16	Trigger	1
17	E stopper	1
18	Filter	1
19	Brush	1
20	Instruction manual	1



Fluid nozzle-fluid needle set combination

Fluid nozzle		Fluid needle set
Orifice φ mm(in)	Mark	Mark
φ 1.2(0.047)	400LV/12	40012
φ 1.3(0.051)	400LV/13	20015
φ 1.4(0.055)	400LV/14	
φ 1.5(0.059)	400LV/15	
φ 1.6(0.063)	400LV/16	
φ 1.8(0.071)	400LV/18	20020

When ordering parts, specify gun's model, part name with ref. No. and marked No. of air cap set, fluid nozzle and fluid needle.

◆ Marked parts are wearable parts.

## POLLUTION PREVENTION OPPORTUNITY DATA SHEET

### HIGH TRANSFER EFFICIENCY PAINT SPRAY SYSTEMS

**Revision:** 05/95  
**Process / Product:** Spray Paint Systems  
**Process Code:** ID-06-04, ID-05-02, ID-05-01  
**Substitute for:** High Velocity Spray Paint Systems  
**Waste Stream:** Excess Paint Use Resulting from Overspray  
**Applicable EPA Hazardous Waste Codes:** D007, D008, D035  
**Applicable EPCRA Targeted Constituents:** Toluene, Xylene, Methyl Ethyl Ketone, Acetone, n-Butyl Alcohol, Lead, Chromium, Zinc Compounds

---

**Introduction:** In conventional paint spray systems, paint atomization occurs via high-velocity air jets, forcing paint through small air holes in the paint gun face caps. Air pressures used range from 40 to 80 psi, with air volumes of 8 to 30 sqfin. The atomized paint particles travel at high velocities and tend to bounce off the object being painted rather than adhering to the surface. In addition, the expanding high pressure air (as high as 70 psi) passing through the small face cap openings causes turbulent flow of the paint stream following air currents within the paint booth. The amount of paint that bypasses the workpiece (overspray) is relatively high for air pressure atomized spray painting. Transfer efficiencies of 15 to 30 percent are associated with conventional painting systems.

**Description:** There are four basic types of high transfer efficiency paint guns: high volume/low pressure (HVLP), airless (also called pressure atomized), pressure atomized air-assisted, and electrostatic. Electrostatic spray paint systems are discussed in a separate Pollution Prevention Opportunity Data Sheet, 'Electrostatic Finishing;' the others are described below.

High Volume Low Pressure (HVLP) paint systems atomize paint via a high volume of air delivered at a low pressure (less than 10 psi). In some HVLP systems, the air supply is turbine generated; in others, shop air (100 psi) is converted to less than 10 psi. Because the atomized paint particles are delivered at low speeds to the object being painted, less paint is lost as overspray, bounce, and blow back. Typically the transfer efficiency with HVLP is 50 to 65 percent. To achieve high quality finishes at normal production rates, the temperature, pressure, and volume of air used by the system must be properly controlled. Some HVLP paint guns allow the air pressure to be adjusted. If operated at pressures above the manufacturer-specified limits, the paint guns transfer efficiency could be lowered; the gun could be made into a conventional high-pressure gun.

Air Permits Division

# Calculations Guidance Package



## Chromium Plating & Anodizing Operations Using Chromic Acid

Compiled, published, and distributed by the  
Air Permits Division  
Texas Commission on Environmental Quality  
Post Office Box 13087 - MC 163  
Austin, Texas 78711-3087  
(512) 239-1250  
10/2007

## **I. INTRODUCTION**

### **A. GENERAL**

Plating and anodizing operations range in size from small shops, with one or two tanks that are operated only a few hours per week, to large shops with several tanks that are operated 24 hours per day, 7 days per week. Many plating and anodizing operations are captive shops that perform chromium electroplating or chromic acid anodizing as one operation within or for a manufacturing facility. Other facilities are job shops that provide custom plating or anodizing services for many different clients. The three primary operations performed are: hard chromium plating, decorative chrome plating, and chromic acid anodizing. Many facilities will have a combination of these processes. An understanding of the number and type of plating or anodizing operations being conducted at a facility is necessary to adequately identify emission points and emission rates. The following is a brief review of the hard and decorative chrome plating operations and chromic acid anodizing.

### **B. HARD CHROMIUM ELECTROPLATING OF METALS**

A relatively thick layer of chromium (1.3-762  $\mu\text{m}$  or 0.05-30 mils) is deposited directly on the base metal (usually steel) to provide a surface with wear resistance, low coefficient of friction, hardness, and corrosion resistance, or for surface build-up. Tanks used in hard chrome plating operations (hexavalent chromium) contain chromic acid, sulfuric acid, and water. The chromic acid is the source of the hexavalent chromium that reacts and deposits on the metal and that is emitted to the atmosphere. The sulfuric acid catalyzes the chromium deposition reactions. Insoluble anodes made of lead alloy that contain either tin or antimony are contained within the tank. The part to be plated is the cathode and is connected to the cathode bar of the rectifier. Chromium electroplating requires constant control of the plating bath temperature, current density, plating time, and bath composition.

### **C. DECORATIVE CHROMIUM ELECTROPLATING OF METALS**

Decorative chromium plating uses a thinner layer of chromium (0.003-2.5  $\mu\text{m}$  or 0.0001-0.1 mils) usually over a layer of nickel previously placed on the base material (e.g., brass, steel, aluminum, or plastic). Decorative electroplating baths operate on the same principle as the hard chromium plating process, but requires shorter plating times and operates at a lower current density. Some decorative chromium plating operations use fluoride catalysts instead of sulfuric acid because fluoride catalysts have been found to produce higher bath efficiencies.

#### D. DECORATIVE CHROMIUM ELECTROPLATING OF PLASTICS

Most plastics that are electroplated with chromium are formed from the polymer composed of acrylonitrile, butadiene, and styrene (ABS). The chroming of ABS plastic parts consists of several steps:

1. Chromic acid/sulfuric acid etch;
2. Dilute hydrochloric acid dip;
3. Colloidal palladium activation;
4. Dilute hydrochloric acid dip;
5. Electroless nickel plating or copper plating; and
6. Chromium electroplating cycle.

After each process the part is rinsed with water to prevent solution contamination. The chromic acid/sulfuric acid etch renders the ABS surface hydrophilic (having a strong tendency to bind or absorb water, which results in swelling and formation of reversible gels) and modifies the surface to provide adhesion for the metal coating. The dilute hydrochloric acid dips are used to clean the surface and remove palladium metal from the plating rack, which is insulated with a coating of polyvinyl chloride. The colloidal palladium activation solution deposits a thin layer of metallic palladium over the plastic surface. The metallic palladium induces the deposition of copper or nickel, which will not deposit directly onto plastic. The electroless nickel and copper plate are applied to impart electrical conductivity to the part; otherwise, the insulation surface of the plastic could not be electroplated with chromium.

#### E. CHROMIC ACID ANODIZING

Chromic acid anodizing is used primarily on aircraft parts and architectural structures that are subject to high stress and corrosion. Chromic acid anodizing is used to provide an oxide layer on aluminum that imparts the following properties:

1. Corrosion protection;
2. Electrical insulation;
3. Ease of coloring; and
4. Improved dielectric strength.

Chromic acid anodizing requires the rectifier to be fitted with a rheostat or other control mechanism to allow starting at about 5 volts, the anodizing tank is the cathode in the electrical circuit, the aluminum part to be anodized is the anode, and sidewall shields typically are used instead of a liner in the tank to minimize short circuits and to decrease the effective cathode area. Several pretreatment steps are used to clean the aluminum before anodizing:

1. Alkaline soak;
2. Desmut (remove soil or grease films that cleaners and etchants leave behind);
3. Etching; and
4. Vapor degreasing.



## F. TRIVALENT CHROMIUM PLATING

Trivalent chromium electroplating baths have been developed primarily to replace hexavalent chromium plating baths. The advantages of the trivalent chromium processes over the hexavalent chromium process are (1) fewer environmental concerns, (2) higher productivity and (3) lower operating costs. The trivalent bath does not contain any appreciable amount of hexavalent chromium, which is more toxic than trivalent chromium. There are two types of trivalent chromium processes on the market; single-cell and double-cell. The major differences in the two processes are that (1) the double-cell process solution contains minimal-to-no chlorides whereas the single-cell process solution contains a high concentration of chlorides; and (2) the double-cell process utilizes lead anodes that are placed in anode boxes that contain a dilute sulfuric acid solution and are lined with a permeable membrane whereas the single-cell process utilizes carbon or graphite anodes that are placed in direct contact with the plating solution. As a result of the chemistry of the trivalent chromium electrolyte, misting does not occur during plating, as it does during hexavalent chromium plating. Use of trivalent chromium reduces waste disposal problems and costs.

## II. INSTRUCTIONS

This guidance provides two methods of calculating emissions from a chromium plating process. The difference between the methods is whether the applicant chooses to calculate emission rates using the uncontrolled emission rate factors then apply specific emission abatement control efficiencies applicable to their facility; or the applicant chooses to select a controlled emission factor from an enclosed table based upon a proposed or existing abatement type. For calculations that will be done using the uncontrolled emission factors use steps 1 thru 13 (use TABLE 1 and 1a). For calculations using a controlled emission factor skip to step 14 and complete the instructions (use TABLE 2 and 2a). The calculations are made with data provided by the applicant. To assist in these calculations, tables are provided according to the calculation method chosen. A completed TABLE 1 and 1a or TABLE 2 and 2a, in addition to the applicant's calculations and supporting material, will serve to expedite the permit review process.

**NOTE:** If you use a trivalent chromium process at your facility do not use the following calculations. Contact the TCEQ, Air Permits Division, Mechanical/Agricultural Section for guidance.

1. Select the emission factor ( $EF_T$  and  $EF_I$ ) appropriate to your chromium operation(s) (hard or decorative chromium plating) using the enclosed TABLE 1.
2. Calculate the total PM ( $ER_T$ ) and the total chromium compounds ( $ER_I$ ) for the uncontrolled emission rates, then enter their values into Table 1:

$ER_T = EF_T \times A \times \text{lb}/7000 \text{ grains (lbs/hr) Rate for total uncontrolled PM}$

$ER_I = EF_I \times A \times \text{lb}/7000 \text{ grains (lbs/hr) Rate for uncontrolled chromium compounds}$

**3.** Do you use a suppressant (foam, fume, or mechanical) in your chromium plating tank? If yes, complete the following then go to 4.

$FE = (1 - (\%)/100)$ , where % is the efficiency of the suppressant.

The efficiency of the suppressant can usually be found in the manufacturer's literature or by contacting the manufacturer of your particular suppressant.

Enter the value of FE into TABLE 1, then calculate the following (enter the value of ER<sub>2</sub> and ER<sub>3</sub> into TABLE 1a):

$$ER_2 = ER_T \times FE \text{ (lbs/hr)}$$

$$ER_3 = ER_1 \times FE \text{ (lbs/hr)}$$

If you do not use a fume suppressant, complete the following (enter the value of ER<sub>2</sub> and ER<sub>3</sub> into TABLE 1a) then go to 4.

$$ER_2 = ER_T$$

$$ER_3 = ER_1$$

**4.** Do you use a capture hood on your chromium plating tank? If yes, complete the following calculation (enter the value of ER<sub>4</sub> and ER<sub>5</sub> into TABLE 1a). If not, go to 5.

$$ER_4 = ER_2 \times CE/100 \text{ (lbs/hr)}$$

$$ER_5 = ER_3 \times CE/100 \text{ (lbs/hr)}$$

**NOTE:** CE is the percent capture efficiency of your hood design. Hoods designed in accordance with Industrial Ventilation, A Manual of Recommended Practice, can be conservatively considered to have 98% capture efficiency.

If you use a hood and a fume suppressant, go to 7.

If you use a hood and no fume suppressant, go to 8.

**5.** If you do not use a capture hood, but use a fume suppressant, complete the following (enter the values of ER<sub>4</sub> and ER<sub>5</sub> into TABLE 1a), then skip to 10.

$$ER_4 = ER_2 \text{ (lbs/hr) (No hood, but using a fume suppressant)}$$

$$ER_5 = ER_3 \text{ (lbs/hr) (No hood, but using a fume suppressant)}$$

If you do not use a capture hood, and also do not use a fume suppressant, then go to 6.

**6.** You will not be authorized to operate a chromium plating tank without the use of, as a minimum, a fume suppressant, and/or a capture hood with an abatement device.

**7.** Do you have an abatement device that controls the emissions from your hood exhaust? If yes, complete the following calculations enter the values of AE, ER<sub>6</sub> and ER<sub>7</sub> into TABLE 1, then skip to 11. If not, skip to 9.

The efficiency of the abatement device you propose to use, or you are using, can be determined from the manufacturers literature or by contacting the manufacturer directly.

$AE = [1 - (\%)/100]$ , where % is the abatement device efficiency.

$ER_6 = ER_4 \times AE$  (lbs/hr)

$ER_7 = ER_5 \times AE$  (lbs/hr)

**8.** Do you have an abatement device that controls the emissions from your hood exhaust?

If yes, complete the following calculations, enter the values of AE,  $ER_6$  and  $ER_7$  into TABLE 1, then go to 11. If not, go back to 6.

The efficiency of the abatement device you propose to use, or you are using, can be determined from the manufacturers literature or by contacting the manufacturer directly.

$AE = (1 - (\%)/100)$ , where % is the abatement device efficiency.

$ER_6 = ER_4 \times AE$  (lbs/hr)

$ER_7 = ER_5 \times AE$  (lbs/hr)

**9.** Complete the following, then enter the values of  $ER_6$  and  $ER_7$  into TABLE 1, then skip to 11:

$ER_6 = ER_4$  (lbs/hr)

$ER_7 = ER_5$  (lbs/hr)

**10.** Calculate the total hourly fugitive emission rates from the tank and enter their values ( $FUG_T$  and  $FUG_1$ ) into TABLE 1, then skip to 12:

Fugitive emissions are those emissions that are not captured by a hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$FUG_T = (ER_4) (0.5)$  (lbs/hr) (Fume suppressant only)

$FUG_1 = (ER_5) (0.5)$  (lbs/hr) (Fume suppressant only)

**11.** Calculate the fugitive emission rates from the tank and enter their values ( $FUG_T$  and  $FUG_1$ ) into TABLE 1, then skip to 13:

Fugitive emissions are those emissions that are not captured by the hood system; and therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$FUG_T = (ER_2 - ER_4) (0.5)$  (lbs/hr)

$FUG_1 = (ER_3 - ER_5) (0.5)$  (lbs/hr)

**12.** Calculate your annual fugitive emission rate (AFUG<sub>T</sub> and AFUG<sub>I</sub>) and enter their values of into TABLE 1:

$$AFUG_T = (FUG_T \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_I = (FUG_I \times OY)/2000 \text{ (tons/year)}$$

**13.** Calculate your annual emission rates (AER<sub>T</sub> and AER<sub>I</sub>) and the annual fugitive rates (AFUG<sub>T</sub> and AFUG<sub>I</sub>) and enter their values into TABLE 1.

$$AER_T = (ER_6 \times OY)/2000 \text{ (tons/year)}$$

$$AER_I = (ER_7 \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_T = (FUG_T \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_I = (FUG_I \times OY)/2000 \text{ (tons/year)}$$

## CHROMIUM PLATING EMISSIONS UNCONTROLLED FACTOR METHOD

**Table 1**

Chromium Plating Tanks	1	2	3	4	5
EFT = Emission Factor Total PM Decorative Chrome (grains/amp-hr)	0.069	0.069	0.069	0.069	0.069
EF1 = Emission Factor Chromium Compounds Decorative Chromium (grains/amp-hr)	0.033	0.033	0.033	0.033	0.033
EFT = Emission Factor Total PM Hard Chrome (grains/amp-hr)	0.25	0.25	0.25	0.25	0.25
EF1 = Emission Factor Chromium Compounds Hard Chromium (grains/amp-hr)	0.12	0.12	0.12	0.12	0.12
A = Maximum Amperage of Chromium Tank Rectifier (amps)					
ERT = Emission Rate Total PM Uncontrolled (lbs/hr)					
ER1 = Emission Rate Chromium Compounds Uncontrolled (lbs/hr)					
FE= Suppressant Efficiency 1- (%) /100					
CE = Hood Capture Efficiency (%)					
AE= Abatement Device Efficiency 1- (%) /100					
ER6=Emission Rate Total PM Controlled (lbs/hr)					
ER7=Emission Rate Chromium Compounds Controlled (lbs/hr)					
FUGT = Total PM Fugitive Emissions Rate (lbs/hr)					
FUG1 = Chromium Compound Fugitive Emission Rate (lbs/hr)					
OY = Total Operating Hours Per Year					
AFUGT = Annual Total PM Fugitive Emission Rate (tons/year)					
AFUG1 = Annual Total Chromium Compounds Fugitive Emission Rate (tons/year)					
AERT = Annual Total PM Emission Rate (tons/yr)					
AER1 = Annual Chromium Compounds Emission Rate (tons/yr)					

## CHROMIUM SUPPLEMENTARY TABLE UNCONTROLLED FACTOR METHOD

**Table 1a**

Chromium Plating Tanks	1	2	3	4	5
ER <sub>2</sub> (lbs/hr) Total PM					
ER <sub>3</sub> (lbs/hr) Chromium Compounds					
ER <sub>4</sub> (lbs/hr) Total PM					
ER <sub>5</sub> (lbs/hr) Chromium Compounds					
ER <sub>2</sub> - ER <sub>4</sub> (lbs/hr)					
ER <sub>3</sub> - ER <sub>5</sub> (lbs/hr)					

**14.** From the enclosed AP-42 Table 12-20-1 select the appropriate emission factor (EF<sub>T</sub>) to determine the total controlled PM emissions according to the specific process and type of abatement equipment being used or planned on being used. Enter the value into Table 2.

**15.** From the same Table 12-20-1 used above, select the appropriate emission factor (EF<sub>1</sub>) for chromium compounds according to the specific process and type of abatement equipment being used or planned on being used. Enter the value into Table 2.

**16.** Enter into Table 2 the rectifier amperage (A).

**17.** Enter into Table 2 the air flow rate (FR) expected from your system as dry standard cubic feet per minute (dscfm).

**18.** Calculate the total hourly controlled PM emissions using the following method:

$$ER_T = EF_T (\text{grains/dscf}) \times (\text{lb}/7000 \text{ grains}) \times FR (\text{dscf/min}) \times (60 \text{ min/hour})$$

Enter the value of ER<sub>T</sub> into Table 2.

**19.** Calculate the total hourly controlled chromium compound emission rate using the following method:

$$ER_1 = EF_1 (\text{grains/dscf}) \times (\text{lb}/7000 \text{ grains}) \times FR (\text{dscf/min}) \times (60 \text{ min/hour})$$

Enter the value of ER<sub>1</sub> into Table 2.

**20.** Do you use only a fume suppressant with a capture hood on your chromium plating tank? If yes, complete the following calculation and instructions (enter the value of ER<sub>2</sub> and ER<sub>3</sub> into TABLE 2a), then go to 22. If not, go to 21.

$$ER_2 = ER_T \times CE/100 (\text{lbs/hr})$$

$$ER_3 = ER_1 \times CE/100 (\text{lbs/hr})$$

Note: CE is the percent capture efficiency of your hood design. Hoods designed in accordance with the Industrial Ventilation, A Manual of Recommended Practice, can be conservatively considered to have 98% capture efficiency.

**21.** Do you use only a fume suppressant and no capture hood over your tank? If yes, complete the following calculation and instructions. If not, skip to 25. Calculate the hourly fugitive emission rates from the tank and enter their values (FUG<sub>T</sub> and FUG<sub>I</sub>) into TABLE 2, then skip to 23:

$$FUG_T = ER_T \times (0.5) \text{ (lbs/hr)}$$

$$FUG_I = ER_I \times (0.5) \text{ (lbs/hr)}$$

Fugitive emissions are those emissions that are not captured by the hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

**22.** Calculate the fugitive emission rate from the tank and enter the values of FUG<sub>T</sub> and FUG<sub>I</sub> into TABLE 2, then go to 24:

Fugitive emissions are those emissions that are not captured by the hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$$FUG_T = (ER_T - ER_2) (0.5) \text{ (lbs/hr)}$$

$$FUG_I = (ER_I - ER_3) (0.5) \text{ (lbs/hr)}$$

**23.** Calculate your annual total fugitive emission rates (AFUG<sub>T</sub> and AFUG<sub>I</sub>) and enter their values into TABLE 2:

$$AFUG_T = (FUG_T \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_I = (FUG_I \times OY)/2000 \text{ (tons/year)}$$

**24.** Calculate your annual stack and fugitive emission rates (AER<sub>T</sub>, AER<sub>I</sub>, AFUG<sub>T</sub> and AFUG<sub>I</sub>) and enter their value into TABLE 2:

$$AER_T = (ER_2 \times OY)/2000 \text{ (tons/year)}$$

$$AER_I = (ER_3 \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_T = (FUG_T \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_I = (FUG_I \times OY)/2000 \text{ (tons/year)}$$

**25.** Calculate your annual emission rates (AER<sub>T</sub> and AER<sub>I</sub>) and enter their values into TABLE 2.

$$AER_T = (ER_T \times OY)/2000 \text{ (tons/year)}$$

$$AER_I = (ER_I \times OY)/2000 \text{ (tons/year)}$$

## CHROMIUM PLATING EMISSIONS CONTROLLED FACTORS

**Table 2**

Chromium Plating Tanks	1	2	3	4	5
EF <sub>T</sub> = Controlled Total PM Emission Factor for Decorative Chromium (grains/dscf)					
EF <sub>I</sub> = Controlled Chromium Compounds Emission Factor for Decorative Chromium (grains/dscf)					
EF <sub>T</sub> = Controlled Total PM Emission Factor for Hard Chromium (grains/dscf)					
EF <sub>I</sub> = Controlled Chromium Compounds Emission Factor for Hard Chromium (grains/dscf)					
Type of Control					
A = Maximum Amperage of Chromium Tank Rectifier (amps)					
FR = Flow Rate (dscf)					
ER <sub>T</sub> = Emission Rate for Total PM (lbs/hr)					
ER <sub>I</sub> = Emission Rate for Chromium Compounds (lbs/hr)					
FUG <sub>T</sub> = Total PM Fugitive Emissions (lbs/hr)					
FUG <sub>I</sub> = Chromium Compounds Fugitive Emissions (lbs/hr)					
OY = Total Operating Hours Per Year					
AFUG <sub>T</sub> = Annual Total PM Fugitive Emission Rate (tons/year)					
AFUG <sub>I</sub> = Annual Chromium Compounds Fugitive Emission Rate (tons/year)					
AER <sub>T</sub> = Total PM Annual Emission Rate (tons/yr)					
AER <sub>I</sub> = Total Annual Chromium Compounds Emission Rate (tons/yr)					

## CHROMIUM SUPPLEMENTARY TABLE

**Table 2a**

Chromium Plating Tanks	1	2	3	4	5
ER <sub>2</sub> (lbs/hr)					
ER <sub>3</sub> (lbs/hr)					
(ER <sub>T</sub> - ER <sub>2</sub> ) (lbs/hr)					
(ER <sub>I</sub> - ER <sub>3</sub> ) (lbs/hr)					



**Table 12.20-1. EMISSION FACTORS FOR CHROMIUM ELECTROPLATING: <sup>a</sup>**

Process	Chromium Compounds		Emission Factor Rating	Total PM <sup>c</sup>		Emission Factor Rating
	grains/A-hr	grains/dscf		grains/A-hr	grains/dscf	
<b>Hard Chromium Electroplating <sub>d</sub></b>	0.12	N/A	B	0.25	N/A	C
-- with moisture extractor <sub>e</sub>	N/A	0.00014	D	N/A	0.00028	E
-- with polypropylene balls <sub>f</sub>	N/A	0.00042	D	N/A	0.00088	E
-- with fume suppressant <sub>g</sub>	N/A	0.00016	D	N/A	0.00034	E
-- with fume suppressant and polypropylene balls <sub>h</sub>	N/A	3.0 x 10 <sup>-5</sup>	D	N/A	6.3 x 10 <sup>-5</sup>	E
-- with packed-bed scrubber <sub>j</sub>	N/A	2.1 x 10 <sup>-5</sup>	D	N/A	4.4 x 10 <sup>-5</sup>	E
-- with packed-bed scrubber, fume suppressant, and polypropylene balls <sub>k</sub>	N/A	2.6 x 10 <sup>-6</sup>	D	N/A	5.5 x 10 <sup>-6</sup>	E
-- with chevron-blade mist eliminator <sub>m</sub>	N/A	8.8 x 10 <sup>-5</sup>	D	N/A	0.00018	E
-- with mesh-pad mist eliminator <sub>n</sub>	N/A	1.2 x 10 <sup>-5</sup>	D	N/A	2.6 x 10 <sup>-5</sup>	E
-- with packed-bed scrubber and mesh-pad eliminator <sub>p</sub>	N/A	3.2 x 10 <sup>-8</sup>	E	N/A	6.7 x 10 <sup>-8</sup>	E
-- with composite mesh-pad mist eliminator <sub>q</sub>	N/A	3.8 x 10 <sup>-6</sup>	D	N/A	8.0 x 10 <sup>-6</sup>	E
<b>Decorative Chromium Electroplating <sub>r</sub></b> (SCC 3-09-010-28)	0.033	N/A	D	0.069	N/A	E
-- with fume suppressant <sub>s</sub>	N/A	1.2 x 10 <sup>-6</sup>	D	N/A	2.5 x 10 <sup>-6</sup>	E

**a** For chromium electroplating tanks only. Factors represent uncontrolled emissions unless otherwise noted. Emission factors based on total energy input in units of grains per ampere-hour (grains/A-hr) and based on concentrations in units of grains per dry standard cubic foot (grains/dscf). To convert from grains/A-hr to mg/A-hr multiply by 64.8. To convert grains/dscf to mg/dscm, multiply by 2,290. To convert grains/A-hr to grains/dscf, multiply by 0.01. To convert grains/dscf to grains/A-hr multiply by 100. Note that there is considerable uncertainty in these latter two conversion factors because of differences in tank geometry, ventilation, and control device performance. For controlled emissions, factors based on concentration should be used whenever possible. SCC = Source Classification Code. NA = units not applicable.

**b** Comprised almost completely of hexavalent chromium.

**c** Total PM includes filterable and condensable PM. However, condensable PM is likely to be negligible. All PM from chromium electroplating sources is likely to be emitted as PM-10. Factors estimated based on assumption that PM consists entirely of chromic acid mist.

**d, e, f, g, h, j, k, m, n, p, q, r, s** - AP-42 References

## CHROMIC ACID ANODIZING

This guidance provides methods of calculating emissions from a chromic acid anodizing process. The difference between the methods is whether the applicant chooses to calculate emission rates using the uncontrolled emission rate factors then applying specific emission abatement control efficiencies applicable to their facility; or the applicant chooses to select a controlled emission factor from an enclosed table based upon a proposed or existing abatement type. For calculations that will be done using the uncontrolled emission factors use the following steps 1 thru 13 (use Table 4 and 4a). For calculations using a controlled emission factor skip to step 14 and complete the instructions (use Table 5 and 5a). The calculations are made with data provided by the applicant. To assist in these calculations, tables are provided according to the calculation method chosen. A completed TABLE 4 and 4a or TABLE 5 and 5a, in addition to the applicant's calculations and supporting material, will serve to expedite the permit review process.

**1.** Select the emission factor ( $EF_T$  and  $EF_I$ ) appropriate to your chromic acid anodizing from TABLE 12.20-2 attached. If you use the uncontrolled emission factors listed then go to step 2. If you use a controlled emission factor from the TABLE then skip to step 14.

**2.** Calculate the total PM ( $ER_T$ ) and the total chromium compounds ( $ER_I$ ) for the uncontrolled emission rates, then enter their values into Table 4:

Calculate the surface area (A) of your anodizing tank(s) by multiplying the length by the width. Enter the value (A in  $ft^2$ ) into Table 4.

$ER_T = EF_T \times A \times lb/7000 \text{ grains (lbs/hr)}$  Rate for total uncontrolled PM

$ER_I = EF_I \times A \times lb/7000 \text{ grains (lbs/hr)}$  Rate for uncontrolled chromium compounds

**3.** Do you use a suppressant (foam, fume, or mechanical) in your anodizing tank? If yes, complete the following then go to 4.

$FE = (1 - (\%)/100)$ , where % is the efficiency of the suppressant.

The efficiency of the suppressant can usually be found in the manufacturer's literature or by contacting the manufacturer of your particular suppressant.

Enter the value of FE into TABLE 4, then calculate the following (enter the value of  $ER_2$  and  $ER_3$  into TABLE 4a):

$ER_2 = ER_T \times FE \text{ (lbs/hr)}$

$ER_3 = ER_I \times FE \text{ (lbs/hr)}$

If you do not use a fume suppressant, complete the following (enter the value of  $ER_2$  and  $ER_3$  into TABLE 4a) then go to 4.

$$ER_2 = ER_T$$

$$ER_3 = ER_1$$

**4.** Do you use a capture hood on your anodizing tank? If yes, complete the following calculation (enter the value of  $ER_4$  and  $ER_5$  into TABLE 4a). If not, go to 5.

$$ER_4 = ER_2 \times CE/100 \text{ (lbs/hr)}$$

$$ER_5 = ER_3 \times CE/100 \text{ (lbs/hr)}$$

Note: CE is the percent capture efficiency of your hood design. Hoods designed in accordance with Industrial Ventilation, A Manual of Recommended Practice, can be conservatively considered to have 98% capture efficiency.

If you use a hood and a fume suppressant, go to 7.

If you use a hood and no fume suppressant, go to 8.

**5.** If you do not use a capture hood, but use a fume suppressant complete the following calculation (enter the values of  $ER_4$  and  $ER_5$  into TABLE 4a), then skip to 10.

$$ER_4 = ER_2 \text{ (lbs/hr) (No hood, but using a fume suppressant)}$$

$$ER_5 = ER_3 \text{ (lbs/hr) (No hood, but using a fume suppressant)}$$

If you do not use a capture hood, and also do not use a fume suppressant, then go to 6.

**6.** You will not be authorized to operate a chromic acid anodizing tank without the use of, as a minimum, a fume suppressant, and/or a capture hood with an abatement device.

**7.** Do you have an abatement device that controls the emissions from your hood exhaust? If yes, complete the following calculations, enter the values of AE,  $ER_6$  and  $ER_7$  into TABLE 4, then skip to 11. If not, skip to 9.

The efficiency of the abatement device you propose to use, or you are using, can be determined from the manufacturers literature or by contacting the manufacturer directly.

$$AE = (1 - (\%)/100), \text{ where } \% \text{ is the abatement device efficiency.}$$

$$ER_6 = ER_4 \times AE \text{ (lbs/hr)}$$

$$ER_7 = ER_5 \times AE \text{ (lbs/hr)}$$

**8.** Do you have an abatement device that controls the emissions from your hood exhaust? If yes, complete the following calculations, enter the values of AE,  $ER_6$  and  $ER_7$  into TABLE 4, then go to 11. If not, go back to 6.

The efficiency of the abatement device you propose to use, or you are using, can be determined from the manufacturers literature or by contacting the manufacturer directly.

$AE = [1 - (\%)/100]$ , where % is the abatement device efficiency.

$ER_6 = ER_4 \times AE$  (lbs/hr)

$ER_7 = ER_5 \times AE$  (lbs/hr)

**9.** Complete the following, then enter the values of  $ER_6$  and  $ER_7$  into TABLE 4, then go to 11:

$ER_6 = ER_4$  (lbs/hr)

$ER_7 = ER_5$  (lbs/hr)

**10.** Calculate the total hourly fugitive emission rates from the tank and enter their values ( $FUG_T$  and  $FUG_I$ ) into TABLE 4, then skip to 12:

Fugitive emissions are those emissions that are not captured by a hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$FUG_T = (ER_4) (0.5)$  (lbs/hr) (Fume suppressant only)

$FUG_I = (ER_5) (0.5)$  (lbs/hr) (Fume suppressant only)

**11.** Calculate the fugitive emission rates from the tank and enter their values ( $FUG_T$  and  $FUG_I$ ) into TABLE 4, then skip to 13:

Fugitive emissions are those emissions that are not captured by the hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$FUG_T = (ER_2 - ER_4) (0.5)$  (lbs/hr)

$FUG_I = (ER_3 - ER_5) (0.5)$  (lbs/hr)

**12.** Calculate your annual fugitive emission rate ( $AFUG_T$  and  $AFUG_I$ ) and enter their values into TABLE 4:

$AFUG_T = (FUG_T \times OY)/2000$  (tons/year)

$AFUG_I = (FUG_I \times OY)/2000$  (tons/year)

**13.** Calculate your annual emission rates ( $AER_T$  and  $AER_I$ ) and the annual fugitive rates ( $AFUG_T$  and  $AFUG_I$ ) and enter their values into TABLE 4

$AER_T = (ER_6 \times OY)/2000$  (tons/year)

$AER_I = (ER_7 \times OY)/2000$  (tons/year)

$AFUG_T = (FUG_T \times OY)/2000$  (tons/year)

$AFUG_I = (FUG_I \times OY)/2000$  (tons/year)

**Table 12.20-2. EMISSION FACTORS FOR CHROMIC ACID ANODIZING<sup>a</sup>**

<b>Process</b>	<b>Chromium Compounds<sup>b</sup>, grains/hr-ft<sup>2</sup></b>	<b>Emission Factor Rating</b>	<b>Total PM<sup>c</sup> grains/hr-ft<sup>2</sup></b>	<b>Emission Factor Rating</b>
<b>Chromic Acid Anodizing<sup>d</sup></b> (SCC 3-09-010-38)	2.0	D	4.2	E
-- with polypropylene balls <sup>e</sup>	1.7	D	3.6	E
-- with fume suppressant <sup>f</sup>	0.064	D	0.13	E
-- with fume suppressant and polypropylene balls <sup>g</sup>	0.025	D	0.053	E
-- with packed-bed scrubber <sup>h</sup>	0.0096	D	0.02	E
-- with packed-bed scrubber and fume suppressant <sup>d</sup>	0.00075	D	0.0016	E
-- with mesh-pad mist eliminator <sup>k</sup>	0.0051	E	0.011	E
-- with packed-bed scrubber and mesh pad mist eliminator <sup>m</sup>	0.00054	D	0.0011	E
-- with wet scrubber, moisture extractor, and high efficiency particulate air filter <sup>n</sup>	0.00048	D	0.001	E

**a** For chromium electroplating tanks only. Factors represent uncontrolled emissions unless otherwise noted. Factors are in units of grains per hour per square foot (grains/hr-ft<sup>2</sup>) of tank surface area. SCC = Source Classification Code. To convert from grains/hr-ft<sup>2</sup> to mg/hr-m<sup>2</sup>, multiply by 0.70.

**b** Comprised almost completely of hexavalent chromium.

**c** Total PM includes filterable and condensible PM. However, condensible PM is likely to be negligible. All PM from chromium electroplating sources is likely to be emitted as PM-10. Factors estimated based on assumption that PM consists entirely of chromic acid mist.

**d, e, f, g, h, j, k, m, n** - AP-42 References

## CHROMIC ACID ANODIZING UNCONTROLLED FACTOR METHOD

TABLE 4

Chrome Acid Anodizing Tanks	1	2	3	4	5
EF <sub>T</sub> = Emission Factor Total PM Uncontrolled (grains/hr-ft <sup>2</sup> )	4.2	4.2	4.2	4.2	4.2
EF <sub>1</sub> = Emission Factor Chromium Compounds Uncontrolled (grains/hr-ft <sup>2</sup> )	2.0	2.0	2.0	2.0	2.0
EF <sub>T</sub> = Emission Factor Total PM Controlled (grains/hr-ft <sup>2</sup> )					
EF <sub>1</sub> = Emission Factor Chromium Compounds Controlled (grains/hr-ft <sup>2</sup> )					
A = Anodizing Tank Surface Area (Length x Width ft <sup>2</sup> )					
ER <sub>T</sub> = Emission Rate Total PM Uncontrolled (lbs/hr)					
ER <sub>1</sub> = Emission Rate Chromium Compounds Uncontrolled (lbs/hr)					
FE = Suppressant Efficiency 1 - (%) / 100					
CE = Hood Capture Efficiency (%)					
AE = Abatement Device Efficiency 1 - (%) / 100					
ER <sub>6</sub> = Emission Rate Total PM Controlled (lbs/hr)					
ER <sub>7</sub> = Emission Rate Chromium Compounds Controlled (lbs/hr)					
FUG <sub>T</sub> = Total PM Fugitive Emissions Rate (lbs/hr)					
FUG <sub>1</sub> = Chromium Compound Fugitive Emission Rate (lbs/hr)					
OY = Total Operating Hours Per Year					
AFUG <sub>T</sub> = Annual Total PM Fugitive Emission Rate (tons/year)					
AFUG <sub>1</sub> = Annual Total Chromium Compounds Fugitive Emission Rate (tons/year)					
AER <sub>T</sub> = Annual Total PM Emission Rate (tons/yr)					
AER <sub>1</sub> = Annual Chromium Compounds Emission Rate (tons/yr)					

## CHROMIC ACID ANODIZING SUPPLEMENTARY TABLE UNCONTROLLED FACTOR METHOD

TABLE 4a

Anodizing Tanks	1	2	3	4	5
ER <sub>2</sub> (lbs/hr) Total PM					
ER <sub>3</sub> (lbs/hr) Chromium Compounds					
ER <sub>4</sub> (lbs/hr) Total PM					
ER <sub>5</sub> (lbs/hr) Chromium Compounds					
ER <sub>2</sub> - ER <sub>4</sub> (lbs/hr)					
ER <sub>3</sub> - ER <sub>5</sub> (lbs/hr)					

**14.** From the enclosed AP-42 Table 12-20-20 select the appropriate emission factor ( $EF_T$ ) to determine the total controlled PM emissions according to the specific process and type of abatement equipment being used or planned on being used. Enter the value into Table 5.

**15.** From the same Table 12-20-20 used above, select the appropriate emission factor ( $EF_1$ ) for chromium compounds according to the specific process and type of abatement equipment being used or planned on being used. Enter the value into Table 5.

**16.** Enter into Table 5 the anodizing tank(s) surface area (A).

**17.** Calculate the total hourly controlled PM emissions using the following method:

$$ER_T = EF_T (\text{grains/hr-ft}^2) \times (\text{lb}/7000 \text{ grains}) \times A (\text{ft}^2)$$

Enter the value of  $ER_T$  into Table 5.

**18.** Calculate the total hourly controlled chromium compound emission rate using the following method:

$$ER_1 = EF_1 (\text{grains/hr-ft}^2) \times (\text{lb}/7000 \text{ grains}) \times A (\text{ft}^2)$$

Enter the value of  $ER_1$  into Table 5.

**19.** Do you use only a fume suppressant with a capture hood on your chromium plating tank? If yes, complete the following calculation and instructions (enter the value of  $ER_2$  and  $ER_3$  into TABLE 5a), then go to 21. If not, go to 20.

$$ER_2 = ER_T \times CE/100 (\text{lbs/hr})$$

$$ER_3 = ER_1 \times CE/100 (\text{lbs/hr})$$

Note: CE is the percent capture efficiency of your hood design. Hoods designed in accordance with Industrial Ventilation, A Manual of Recommended Practice, can be conservatively considered to have 98% capture efficiency.

**20.** Do you use only a fume suppressant and no capture hood over your tank? If yes, complete the following calculation and instructions. If not, skip to 24. Calculate the hourly fugitive emission rates from the tank and enter their values ( $FUG_T$  and  $FUG_1$ ) into TABLE 5, then skip to 22:

$$FUG_T = ER_T \times (0.5) (\text{lbs/hr})$$

$$FUG_1 = ER_1 \times (0.5) (\text{lbs/hr})$$

Fugitive emissions are those emissions that are not captured by the hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

**21.** Calculate the fugitive emission rate from the tank and enter the values of  $FUG_T$  and  $FUG_I$  into TABLE 5, then go to 23:

Fugitive emissions are those emissions that are not captured by the hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$$FUG_T = (ER_T - ER_2) (0.5) \text{ (lbs/hr)}$$

$$FUG_I = (ER_I - ER_3) (0.5) \text{ (lbs/hr)}$$

**22.** Calculate your annual total fugitive emission rates ( $AFUG_T$  and  $AFUG_I$ ) and enter their values into TABLE 5:

$$AFUG_T = (FUG_T \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_I = (FUG_I \times OY)/2000 \text{ (tons/year)}$$

**23.** Calculate your annual stack and fugitive emission rates ( $AER_T$ ,  $AER_I$ ,  $AFUG_T$  and  $AFUG_I$ ) and enter their value into TABLE 5:

$$AER_T = (ER_2 \times OY)/2000 \text{ (tons/year)}$$

$$AER_I = (ER_3 \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_T = (FUG_T \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_I = (FUG_I \times OY)/2000 \text{ (tons/year)}$$

**24.** Calculate your annual emission rates ( $AER_T$  and  $AER_I$ ) and enter their values into TABLE 5.

$$AER_T = (ER_T \times OY)/2000 \text{ (tons/year)}$$

$$AER_I = (ER_I \times OY)/2000 \text{ (tons/year)}$$



# **CHROMIC ACID ANODIZING EMISSIONS CONTROLLED FACTOR METHOD**

TABLE 5

Chromic Anodizing Tanks	1	2	3	4	5
EF <sub>T</sub> = Controlled Total PM Emission Factor (grains/hr-ft <sub>2</sub> )					
EF <sub>1</sub> = Controlled Chromium Compounds Emission Factor (grains/hr-ft <sub>2</sub> )					
Type of Control					
A = Anodizing Tanks Surface Area (length x width ft <sub>2</sub> )					
ER <sub>T</sub> = Emission Rate for Total PM (lbs/hr)					
ER <sub>1</sub> = Emission Rate for Chromium Compounds (lbs/hr)					
FUG <sub>T</sub> = Total PM Fugitive Emissions (lbs/hr)					
FUG <sub>1</sub> = Chromium Compounds Fugitive Emissions (lbs/hr)					
OY = Total Operating Hours Per Year					
AFUG <sub>T</sub> = Annual Total PM Fugitive Emission Rate (tons/year)					
AFUG <sub>1</sub> = Annual Chromium Compounds Fugitive Emission Rate (tons/year)					
AER <sub>T</sub> = Total PM Annual Emission Rate (tons/yr)					
AER <sub>1</sub> = Total Annual Chromium Compounds Emission Rate (tons/yr)					

## **CHROMIC ACID ANODIZING SUPPLEMENTARY TABLE**

TABLE 5a

Anodizing Tanks	1	2	3	4	5
ER <sub>2</sub> (lbs/hr)					
ER <sub>3</sub> (lbs/hr)					
(ER <sub>T</sub> - ER <sub>2</sub> ) (lbs/hr)					
(ER <sub>1</sub> - ER <sub>3</sub> ) (lbs/hr)					

**Table 12.20-3. SUMMARY OF PARTICLE SIZE DISTRIBUTIONS FOR CHROMIUM ELECTROPLATING <sup>a</sup>**

Uncontrolled			Controlled <sup>b</sup>		
Diameter, μm	Cumulative Percent Less Than		Diameter, μm	Cumulative Percent Less Than	
	Total PM <sup>c</sup>	Chromium Compounds <sup>d</sup>		Total PM <sup>c</sup>	Chromium Compounds <sup>d</sup>
<0.5	0	0	<0.49	0	0
0.5	9.1	6.9	0.49	18.5	20.4
2.4	48.3	67.7	2.35	94.7	97.5
8.0	59.3	82.6	7.9	100	99.2

<sup>a</sup> Reference 6. Based on C-rated emission data for hard chromium electroplating tanks - Source Classification Code 3 09-010-18.

<sup>b</sup> Controlled with chevron-blade mist eliminators.

<sup>c</sup> Total PM consists of filterable and condensible PM. However, condensible PM is likely to be negligible.

<sup>d</sup> Comprised almost completely of hexavalent chromium.

**Table 12.20-4. EMISSION FACTORS FOR ELECTROPLATING--OTHER METALS <sup>a</sup> EMISSION FACTOR RATING: E**

Source	Pollutant	Emission Factor		Ref.
		grains/A-hr	grains/dscf	
Copper cyanide electroplating tank with mesh-pad mist eliminator (SCC 3-09-010-42)	Cyanide	N/A	$2.7 \times 10^{-6}$	21
Copper sulfate electroplating tank with wet scrubber (SCC 3-09-010-45)	Copper	N/A	$8.1 \times 10^{-5}$	31
Cadmium cyanide electroplating tank (SCC 3-09-010-52)	Cadmium	0.04	N/A	31
-- with mesh-pad mist eliminator	Cyanide	N/A	$1.0 \times 10^{-4}$	21
-- with mesh-pad mist eliminator	Cadmium	N/A	$1.4 \times 10^{-7}$	21
-- with packed-bed scrubber	Cyanide	N/A	$5.9 \times 10^{-5}$	22
-- with packed-bed scrubber	Cadmium	N/A	$1.7 \times 10^{-6}$	22, 31
-- with packed-bed scrubber	Ammonia	N/A	$4.2 \times 10^{-5}$	22
Nickel electroplating tank (SCC 3-09-010-68)	Nickel	0.63	N/A	31
-- with wet scrubber	Nickel	N/A	$6.7 \times 10^{-6}$	31

<sup>a</sup> Factors represent uncontrolled emissions unless noted. All emission factors in units of grains per ampere-hour (grains/A-hr) and as concentrations in units of grains per dry standard cubic foot (grains/dscf). To convert from grains/A-hr to mg/A-hr multiply by 64.8. To convert grains/dscf to mg/dscm, multiply by 2,290. To convert grains/A-hr to grains/dscf, multiply by 0.01. To convert grains/dscf to grains/A-hr multiply by 100. Note that there is considerable uncertainty in these latter two conversion factors because of differences in tank geometry, ventilation, and control device performance. SCC = Source Classification Code. NA = units not applicable.

## HYDROCHLORIC (HCl) ACID TANK TABLE

TABLE 3

HCl Pickle Tanks	1	2	3	4	5
A = Surface area of tank (ft <sup>2</sup> )					
T = Operating temperature (C°)					
Conc. = Percent concentration of HCL by weight (% w/w)					
V = Air velocity across surface of tank (fps)					
P <sub>v</sub> = Vapor pressure of HCl (mmHg from Table 3)					
E = Evaporation rate from tank (lb/hr-ft <sup>2</sup> )					
ER <sub>1</sub> = Emission rate Uncontrolled (lb/hr)					
FE = Suppressant efficiency 1 - (%) / 100					
CE = Hood capture efficiency (%)					
AE= Abatement device efficiency 1 - (%) / 100					
ER <sub>4</sub> = Emission rate Controlled (lb/hr)					
FUG = Fugitive emissions (lb/hr)					
OY= Annual operating hours					
AFUG = Annual HCl fugitive emission rate (tons/year)					
AER = Annual HCl emission rate (tons/year)					

## HYDROCHLORIC ACID SUPPLEMENTARY TABLE

TABLE 3a

HCl Pickle Tanks	1	2	3	4	5
ER <sub>1</sub> (enter into TABLE 2) (lbs/hr)					
ER <sub>2</sub> (lbs/hr)					
ER <sub>3</sub> (lbs/hr)					
(ER <sub>2</sub> - ER <sub>3</sub> ) (lbs/hr)					
ER <sub>4</sub> (enter into TABLE 2) (lbs/hr)					

## HYDROCHLORIC (HCl) ACID TANK EMISSIONS CALCULATIONS

The following calculations are made with data provided by the applicant. To assist in these calculations, TABLE 3, TABLE 3a, and TABLES 3-1 thru 3-4 (regarding partial pressures of HCl over aqueous solutions of HCl located in the Appendix) are provided for your use. A completed TABLE 3 and TABLE 3a, in addition to the applicant's calculations, will serve to expedite the permit review process.

1. Calculate the surface area (A) of each tank in square feet and enter the value of A into TABLE 3.
2. Enter the operating temperature (T) in degrees centigrade (C°), acid concentration (Conc.) by weight percent, and air velocity (V) in feet per second (fps) across the surface of each tank into TABLE 3.
3. Determine the vapor pressure (P<sub>v</sub>) of the HCl solution from the attached TABLE 4. Using the temperature (T, C°) and the percent acid concentration (Conc.) determine the partial pressure of the solution in mmHg and enter the value of P<sub>v</sub> into TABLE 3.
4. Calculate the evaporation rate of HCl from the tank using the following equation and enter the value of E (lb/hr-ft<sup>2</sup>) into TABLE 3 (Requires a calculator with logarithmic functions):

$$E = 25(0.46 + 0.117(V))\log[(760 - P_a)/(760 - P_v)] \text{ (lb/hr-ft}^2\text{)}$$

P<sub>a</sub> = 0 for this calculation

5. Calculate and enter into TABLE 3 and 3a the uncontrolled emission rate, ER<sub>1</sub>:  
ER<sub>1</sub> = E x A (lb/hr)

6. Do you use a suppressant (foam, fume, or mechanical) in your HCl tank? If yes, complete the following then go to 7.

FE = (1 - (%)/100), where % is the efficiency of the suppressant.

The efficiency of the suppressant can usually be found in the manufacturer's literature or by contacting the manufacturer of your particular suppressant. If you cannot determine the efficiency of your suppressant contact the TCEQ, Mechanical Section for guidance. Enter the value of FE into TABLE 3, then calculate the following (enter the value of ER<sub>2</sub> into TABLE 3a):

$$ER_2 = ER_1 \times FE \text{ (lbs/hr)}$$

If you do not use a fume suppressant, complete the following (enter the value of ER<sub>2</sub> into TABLE 2a) then go to 7.

$$ER_2 = ER_1$$

**7.** Do you use a capture hood on your HCl tank? If yes, complete the following appropriate calculation, then go to 10. If no, skip to 8.

If you use a hood, and do not use a fume suppressant, calculate the following (enter the value of ER<sub>3</sub> into TABLE 3a), then go to 10:

$$ER_3 = ER_2 \times CE/100 \text{ (lbs/hr) (Hood, no fume suppressant)}$$

Note: CE is the percent capture efficiency of your hood design. Hoods designed in accordance with Industrial Ventilation, A Manual of Recommended Practice, can be conservatively considered to have 98% capture efficiency. If you use a hood, and also use a fume suppressant, calculate the following (enter the value of ER<sub>3</sub> into TABLE 3a), then go to 10:

$$ER_3 = ER_2 \times CE/100 \text{ (lbs/hr) (Hood and a fume suppressant)}$$

**8.** If you do not use a capture hood, but use a fume suppressant use the following (enter the value of ER<sub>3</sub> into TABLE 3a), then go to 12.

$$ER_3 = ER_2 \text{ (lbs/hr) (No hood, use a fume suppressant)}$$

If you do not use a capture hood, and also do not use a fume suppressant, then go to 9.

**9.** You will not be authorized to operate a HCl pickle tank without the use of, as a minimum, a fume suppressant or a capture hood.

**10.** Do you have an abatement device that controls the emissions from your hood exhaust? If yes, complete the following calculations, enter the values of AE and ER<sub>4</sub> into TABLE 3, then go to 13. If not, then go to 11.

The efficiency of the abatement device you propose to use or are using, can be determined from the manufacturer's literature or by contacting the manufacturer directly. If the efficiency of your abatement device cannot be determined, contact the TCEQ Mechanical Section for guidance.

$$AE = (1-(\%)/100), \text{ where } \% \text{ is the abatement device efficiency.}$$

$$ER_4 = ER_3 \times AE \text{ (lbs/hr)}$$

**11.** Without an abatement device your hourly emission rate is the same as calculated in 7. Complete the following, enter the value of ER<sub>4</sub> into TABLEs 3 and 3a, then go to 13:

$$ER_4 = ER_3 \text{ (lbs/hr)}$$

**12.** Calculate the hourly fugitive emission rate from the tank and enter the value of FUG into TABLE 3, then go to 14:

Fugitive emissions are those emissions that are not captured by a hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$$FUG = (ER_3) (0.5) \text{ (lbs/hr) (Fume suppressant only)}$$

**13.** Calculate the fugitive emission rate from the tank and enter the value of FUG into TABLE 3, then go to 15:

Fugitive emissions are those emissions that are not captured by the hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$$FUG = (ER_2 - ER_3) (0.5) \text{ (lbs/hr)}$$

**14.** Calculate your annual fugitive emission rate (AFUG) and enter the value of AFUG into TABLE 2:

$$AFUG = (FUG \times OY)/2000 \text{ (tons/year)}$$

**15.** Calculate your annual emission rate (AER) and the annual fugitive rate (AFUG) and enter the values of AER and AFUG into TABLE 3.

$$AER = (ER_4 \times OY)/2000 \text{ (tons/year)}$$

$$AFUG = (FUG \times OY)/2000 \text{ (tons/year)}$$

# CHROMIUM PLATING

## EXAMPLE CALCULATIONS

### III. INSTRUCTIONS

A. This guidance package provides two methods of calculating emissions from a chromium plating process. The difference between the methods is whether the applicant chooses to calculate emission rates using the uncontrolled emission rate factors then applying specific emission abatement control efficiencies applicable to their facility; or the applicant chooses to select a controlled emission factor from an enclosed table based upon a proposed or existing abatement type. For calculations that will be done using the uncontrolled emission factors use steps 1 thru 13 (use TABLE 1 and 1a). For calculations using a controlled emission factor skip to step 14 and complete the instructions (use TABLE 2 and 2a). The calculations are made with data provided by the applicant. To assist in these calculations, tables are provided according to the calculation method chosen. A completed TABLE 1 and 1a or TABLE 2 and 2a, in addition to the applicant's calculations and supporting material, will serve to expedite the permit review process.

**NOTE:** If you use a trivalent chromium process at your facility do not use the following calculations. Contact the TCEQ, Air Permits Division, Mechanical Section for guidance on trivalent chromium permitting.

1. Select the emission factor ( $EF_T$  and  $EF_I$ ) appropriate to your chromium operation(s) (hard or decorative chromium plating) using the enclosed TABLE 1.

2. Calculate the total PM ( $ER_T$ ) and the total chromium compounds ( $ER_I$ ) for the uncontrolled emission rates, then enter their values into Table 1:

$ER_T = EF_T \times A \times \text{lb}/7000 \text{ grains (lbs/hr) Rate for total uncontrolled PM}$

$ER_I = EF_I \times A \times \text{lb}/7000 \text{ grains (lbs/hr) Rate for uncontrolled chromium compounds}$

$$ER_T = 0.069 \text{ gr/amp-hr} \times 1000 \text{ amps} \times \text{lb}/7000 = 0.0099; ER_I = 0.033 \times 1000 \times \text{lb}/7000 = 0.0047$$

3. Do you use a suppressant (foam, fume, or mechanical) in your chromium plating tank? If yes, complete the following then go to 4. **Yes; 98% efficient**

$FE = (1 - (\%)/100)$ , where % is the efficiency of the suppressant.

$$FE = (1 - (98\%)/100) = 0.02$$

The efficiency of the suppressant can usually be found in the manufacturer's literature or by contacting the manufacturer of your particular suppressant.

Enter the value of FE into TABLE 1, then calculate the following (enter the value of  $ER_2$  and  $ER_3$  into TABLE 1a):

$$ER_2 = ER_T \times FE \text{ (lbs/hr); } ER_2 = (0.0099)(.02) = 1.98 \times 10^{-4} \text{ (lbs/hr)}$$

$$ER_3 = ER_1 \times FE \text{ (lbs/hr); } ER_3 = (0.0047)(.02) = 9.4 \times 10^{-5} \text{ (lbs/hr)}$$

If you do not use a fume suppressant, complete the following (enter the value of  $ER_2$  and  $ER_3$  into TABLE 1a) then go to 4.

$$ER_2 = ER_T$$

$$ER_3 = ER_1$$

**4.** Do you use a capture hood on your chromium plating tank? If yes, complete the following calculation (enter the value of  $ER_4$  and  $ER_5$  into TABLE 1a). If not, go to 5.

**Yes; CE = 98% efficient**

$$ER_4 = ER_2 \times CE/100 \text{ (lbs/hr); } ER_4 = (1.98 \times 10^{-4} \text{ (lbs/hr)})(98/100) = 1.94 \times 10^{-4} \text{ (lbs/hr)}$$

$$ER_5 = ER_3 \times CE/100 \text{ (lbs/hr); } ER_5 = (9.4 \times 10^{-5} \text{ (lbs/hr)})(98/100) = 9.2 \times 10^{-5} \text{ (lbs/hr)}$$

**NOTE:** CE is the percent capture efficiency of your hood design. Hoods designed in accordance with the Industrial Ventilation, A Manual of Recommended Practice, can be conservatively considered to have 98% capture efficiency.

If you use a hood and a fume suppressant, go to 7.

If you use a hood and no fume suppressant, go to 8.

**5.** If you do not use a capture hood, but use a fume suppressant complete the following (enter the values of  $ER_4$  and  $ER_5$  into TABLE 1a), then skip to 10.

$$ER_4 = ER_2 \text{ (lbs/hr) (No hood, but using a fume suppressant)}$$

$$ER_5 = ER_3 \text{ (lbs/hr) (No hood, but using a fume suppressant)}$$

If you do not use a capture hood, and also do not use a fume suppressant, then go to 6.

**6.** You will not be authorized to operate a chromium plating tank without the use of, as a minimum, a fume suppressant, and/or a capture hood with an abatement device.

**7.** Do you have an abatement device that controls the emissions from your hood exhaust? If yes, complete the following calculations, enter the values of AE,  $ER_6$  and  $ER_7$  into TABLE 1, then skip to 11. If not, skip to 9. **Yes; 98% efficient hood**

The efficiency of the abatement device you propose to use, or you are using, can be determined from the manufacturers literature or by contacting the manufacturer directly. If the efficiency of your abatement device cannot be determined contact the TCEQ, Mechanical Section for guidance.

$$AE = [1 - (\%)/100], \text{ where } \% \text{ is the abatement device efficiency. } AE = [1 - (98\%)/100] = 0.02$$

$$ER_6 = ER_4 \times AE \text{ (lbs/hr); } ER_6 = (1.94 \times 10^{-4} \text{ lbs/hr}) (0.02) = 3.89 \times 10^{-6} \text{ (lbs/hr)}$$

$$ER_7 = ER_5 \times AE \text{ (lbs/hr); } ER_7 = (9.2 \times 10^{-5}) (0.02) = 1.84 \times 10^{-6} \text{ (lbs/hr)}$$



**8.** Do you have an abatement device that controls the emissions from your hood exhaust?  
If yes, complete the following calculations, enter the values of AE, ER<sub>6</sub> and ER<sub>7</sub> into TABLE 1, then go to 11. If not, go back to 6.

The efficiency of the abatement device you propose to use, or you are using, can be determined from the manufacturers literature or by contacting the manufacturer directly. If the efficiency of your abatement device cannot be determined contact the TCEQ, Mechanical Section for guidance.

$AE = [1 - (\%)/100]$ , where % is the abatement device efficiency.

$ER_6 = ER_4 \times AE$  (lbs/hr)

$ER_7 = ER_5 \times AE$  (lbs/hr)

**9.** Complete the following, then enter the values of ER<sub>6</sub> and ER<sub>7</sub> into TABLE 1, then skip to 11:

$ER_6 = ER_4$  (lbs/hr)

$ER_7 = ER_5$  (lbs/hr)

**10.** Calculate the total hourly fugitive emission rates from the tank and enter their values (FUG<sub>T</sub> and FUG<sub>I</sub>) into TABLE 1, then skip to 12:

Fugitive emissions are those emissions that are not captured by a hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$FUG_T = (ER_4) (0.5)$  (lbs/hr) (Fume suppressant only)

$FUG_I = (ER_5) (0.5)$  (lbs/hr) (Fume suppressant only)

**11.** Calculate the fugitive emission rates from the tank and enter their values (FUG<sub>T</sub> and FUG<sub>I</sub>) into TABLE 1, then skip to 13:

Fugitive emissions are those emissions that are not captured by the hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$FUG_T = (ER_2 - ER_4) (0.5)$  (lbs/hr);  $FUG_T = (4 \times 10^{-6}) (0.5) = 2 \times 10^{-6}$  (lbs/hr)

$FUG_I = (ER_3 - ER_5) (0.5)$  (lbs/hr);  $FUG_I = (2 \times 10^{-6}) (0.5) = 1 \times 10^{-6}$  (lbs/hr)

**12.** Calculate your annual fugitive emission rate (AFUG<sub>T</sub> and AFUG<sub>I</sub>) and enter their values into TABLE 1:

$AFUG_T = (FUG_T \times OY)/2000$  (tons/year)

$AFUG_I = (FUG_I \times OY)/2000$  (tons/year)

**13.** Calculate your annual emission rates ( $AER_T$  and  $AER_I$ ) and the annual fugitive rates ( $AFUG_T$  and  $AFUG_I$ ) and enter their values into TABLE 1.

$$AER_T = (ER_6 \times OY)/2000 \text{ (tons/year)} = (3.89 \times 10^{-6}) (4800 \text{ hrs/yr}) (\text{ton}/2000 \text{ lbs}) = 9.34 \times 10^{-6}$$

$$AER_I = (ER_7 \times OY)/2000 \text{ (tons/year)} = (1.84 \times 10^{-6}) (4800 \text{ hrs/yr}) (\text{ton}/2000 \text{ lbs}) = 4.42 \times 10^{-6}$$

$$AFUG_T = (FUG_T \times OY)/2000 \text{ (tons/year)} = (2 \times 10^{-6}) (4800 \text{ hrs/yr}) (\text{ton}/2000 \text{ lbs}) = 4.8 \times 10^{-6}$$

$$AFUG_I = (FUG_I \times OY)/2000 \text{ (tons/year)} = (1 \times 10^{-6}) (4800 \text{ hrs/yr}) (\text{ton}/2000 \text{ lbs}) = 2.4 \times 10^{-6}$$

## CHROMIUM PLATING EMISSIONS UNCONTROLLED FACTOR METHOD

Table 1

<b>Chrome Plating Tanks</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
EF <sub>T</sub> = Emission Factor Total PM Decorative Chrome (grains/amp-hr)	<b>0.069</b>	<b>0.069</b>	<b>0.069</b>	<b>0.069</b>	<b>0.069</b>
EF <sub>1</sub> = Emission Factor Chromium Compounds Decorative Chromium (grains/amp-hr)	<b>0.033</b>	<b>0.033</b>	<b>0.033</b>	<b>0.033</b>	<b>0.033</b>
EF <sub>T</sub> = Emission Factor Total PM Hard Chrome (grains/amp-hr)	<b>0.25</b>	<b>0.25</b>	<b>0.25</b>	<b>0.25</b>	<b>0.25</b>
EF <sub>1</sub> = Emission Factor Chromium Compounds Hard Chromium (grains/amp-hr)	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>
A = Maximum Amperage of Chromium Tank Rectifier (amps)	<b>1000</b>				
ER <sub>T</sub> = Emission Rate Total PM Uncontrolled (lbs/hr)	<b>0.0099</b>				
ER <sub>1</sub> = Emission Rate Chromium Compounds Uncontrolled (lbs/hr)	<b>0.0047</b>				
FE = Suppressant Efficiency 1- (%) / 100	<b>0.02</b>				
CE = Hood Capture Efficiency (%)	<b>98%</b>				
AE = Abatement Device Efficiency 1- (%) / 100	<b>None</b>				
ER <sub>6</sub> = Emission Rate Total PM Controlled (lbs/hr)	<b>3.89 x 10<sup>-4</sup></b>				
ER <sub>7</sub> = Emission Rate Chromium Compounds Controlled (lbs/hr)	<b>1.84 x 10<sup>-6</sup></b>				
FUG <sub>T</sub> = Total PM Fugitive Emissions Rate (lbs/hr)	<b>2 x 10<sup>-6</sup></b>				
FUG <sub>1</sub> = Chromium Compound Fugitive Emission Rate (lbs/hr)	<b>1 x 10<sup>-6</sup></b>				
OY = Total Operating Hours Per Year	<b>4800</b>				
AFUG <sub>T</sub> = Annual Total PM Fugitive Emission Rate (tons/year)	<b>4.8 x 10<sup>-6</sup></b>				
AFUG <sub>1</sub> = Annual Total Chromium Compounds Fugitive Emission Rate (tons/year)	<b>2.4 x 10<sup>-6</sup></b>				
AER <sub>T</sub> = Annual Total PM Emission Rate (tons/yr)	<b>9.34 x 10<sup>-6</sup></b>				
AER <sub>1</sub> = Annual Chromium Compounds Emission Rate (tons/yr)	<b>4.42 x 10<sup>-6</sup></b>				

## CHROMIUM SUPPLEMENTARY TABLE UNCONTROLLED FACTOR METHOD

TABLE 1a

<b>Chromium Plating Tanks</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
ER <sub>2</sub> (lbs/hr)	<b>1.98 x 10<sup>-4</sup></b>				
ER <sub>3</sub> (lbs/hr) Chromium Compounds	<b>9.4 x 10<sup>-5</sup></b>				
ER <sub>4</sub> (lbs/hr) Total PM	<b>1.94 x 10<sup>-4</sup></b>				
ER <sub>5</sub> (lbs/hr) Chromium Compounds	<b>9.2 x 10<sup>-5</sup></b>				
ER <sub>2</sub> - ER <sub>4</sub> (lbs/hr)	<b>4 x 10<sup>-6</sup></b>				
ER <sub>3</sub> - ER <sub>5</sub> (lbs/hr)	<b>2 x 10<sup>-6</sup></b>				

**14.** From the enclosed AP-42 Table 12-20-1 select the appropriate emission factor ( $EF_T$ ) to determine the total controlled PM emissions according to the specific process and type of abatement equipment being used or planned on being used. Enter the value into Table 2.

$$6.7 \times 10^{-8} \text{ grains/dscf}$$

**15.** From the same Table 12-20-1 used above, select the appropriate emission factor ( $EF_1$ ) for chromium compounds according to the specific process and type of abatement equipment being used or planned on being used. Enter the value into Table 2.

$$3.2 \times 10^{-8} \text{ grains/dscf}$$

**16.** Enter into Table 2 the rectifier amperage (A).

$$3000 \text{ amps}$$

**17.** Enter into Table 2 the air flow rate (FR) expected from your system as dry standard cubic feet per minute (dscfm).

$$15,000$$

**18.** Calculate the total hourly controlled PM emissions using the following method:

$$ER_T = EF_T (\text{grains/dscf}) \times (\text{lb}/7000 \text{ grains}) \times FR (\text{dscf/min}) \times (60 \text{ min/hour})$$

$$= (6.7 \times 10^{-8} \text{ grains/dscf})(\text{lb}/7000 \text{ grains})(15,000 \text{ dscf/min})(60 \text{ min/hr}) = 8.743 \times 10^{-6}$$

Enter the value of  $ER_T$  into Table 2.

**19.** Calculate the total hourly controlled chromium compound emission rate using the following method:

$$ER_1 = EF_1 (\text{grains/dscf}) \times (\text{lb}/7000 \text{ grains}) \times FR (\text{dscf/min}) \times (60 \text{ min/hour})$$

$$= (3.2 \times 10^{-8} \text{ grains/dscf})(\text{lb}/7000 \text{ grains})(15,000 \text{ dscf/min})(60 \text{ min/hr}) = 4.11 \times 10^{-6}$$

Enter the value of  $ER_1$  into Table 2.

**20.** Do you use only a fume suppressant with a capture hood on your chromium plating tank? If yes, complete the following calculation and instructions (enter the value of  $ER_2$  and  $ER_3$  into TABLE 2a), then go to 22. If not, go to 21. **No.**

$$ER_2 = ER_T \times CE/100 (\text{lbs/hr})$$

$$ER_3 = ER_1 \times CE/100 (\text{lbs/hr})$$

Note: CE is the percent capture efficiency of your hood design. Hoods designed in accordance with Industrial Ventilation, A Manual of Recommended Practice, can be conservatively considered to have 98% capture efficiency.

**21.** Do you use only a fume suppressant and no capture hood over your tank? If yes, complete the following calculation and instructions. If not, skip to 25.  
Calculate the hourly fugitive emission rates from the tank and enter their values (FUG<sub>T</sub> and FUG<sub>I</sub>) into TABLE 2, then skip to 23:

$$FUG_T = ER_T \times (0.5) \text{ (lbs/hr)}$$

$$FUG_I = ER_I \times (0.5) \text{ (lbs/hr)}$$

Fugitive emissions are those emissions that are not captured by the hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

**22.** Calculate the fugitive emission rate from the tank and enter the values of FUG<sub>T</sub> and FUG<sub>I</sub> into TABLE 2, then go to 24:

Fugitive emissions are those emissions that are not captured by the hood system and therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$$FUG_T = (ER_T - ER_2) (0.5) \text{ (lbs/hr)}$$

$$FUG_I = (ER_I - ER_3) (0.5) \text{ (lbs/hr)}$$

**23.** Calculate your annual total fugitive emission rates (AFUG<sub>T</sub> and AFUG<sub>I</sub>) and enter their values into TABLE 2:

$$AFUG_T = (FUG_T \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_I = (FUG_I \times OY)/2000 \text{ (tons/year)}$$

**24.** Calculate your annual stack and fugitive emission rates (AER<sub>T</sub>, AER<sub>I</sub>, AFUG<sub>T</sub>, and AFUG<sub>I</sub>) and enter their value into TABLE 2:

$$AER_T = (ER_2 \times OY)/2000 \text{ (tons/year)}$$

$$AER_I = (ER_3 \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_T = (FUG_T \times OY)/2000 \text{ (tons/year)}$$

$$AFUG_I = (FUG_I \times OY)/2000 \text{ (tons/year)}$$

**25.** Calculate your annual emission rates (AER<sub>T</sub> and AER<sub>I</sub>) and enter their values into TABLE 2.

$$AER_T = (ER_T \times OY)/2000 \text{ (tons/year)};$$

$$AER_T = (8.743 \times 10^{-6})(4800 \text{ hrs/yr})(\text{ton}/2000 \text{ lbs}) = 2.1 \times 10^{-5} \text{ (tons/year)}$$

$$AER_I = (ER_I \times OY)/2000 \text{ (tons/year)}$$

$$AER_I = (4.11 \times 10^{-6})(4800 \text{ hrs/yr})(\text{ton}/2000 \text{ lbs}) = 9.86 \times 10^{-6} \text{ (tons/year)}$$

## CHROMIUM PLATING EMISSIONS CONTROLLED FACTORS

Table 2

Chrome Plating Tanks	1	2	3	4	5
EF <sub>T</sub> = Controlled Total PM Emission Factor for Decorative Chromium (grains/dscf)					
EF <sub>I</sub> = Controlled Chromium Compounds Emission Factor for Decorative Chromium (grains/dscf)					
EF <sub>T</sub> = Controlled Total PM Emission Factor for Hard Chromium (grains/dscf)	$6.7 \times 10^{-8}$ grains/dscf				
EF <sub>I</sub> = Controlled Chromium Compounds Emission Factor for Hard Chromium (grains/dscf)	$3.2 \times 10^{-8}$ grains/dscf				
Type of Control	Packed Bed Scrubber & Mist Eliminator				
A = Maximum Amperage of Chromium Tank Rectifier (amps)	3,000				
FR = Flow Rate (dscf/min)	15,000				
ER <sub>T</sub> = Emission Rate for Total PM (lbs/hr)	$8.743 \times 10^{-6}$				
ER <sub>I</sub> = Emission Rate for Chromium Compounds (lbs/hr)	$4.11 \times 10^{-6}$				
FUG <sub>T</sub> = Total PM Fugitive Emissions (lbs/hr)					
FUG <sub>I</sub> = Chromium Compounds Fugitive Emissions (lbs/hr)					
OY = Total Operating Hours Per Year	4,800				
AFUG <sub>T</sub> = Annual Total PM Fugitive Emission Rate (tons/year)					
AFUG <sub>I</sub> = Annual Chromium Compounds Fugitive Emission Rate (tons/year)					
AER <sub>T</sub> = Total PM Annual Emission Rate (tons/yr)	$2.1 \times 10^{-5}$				
AER <sub>I</sub> = Total Annual Chromium Compounds Emission Rate (tons/yr)	$9.86 \times 10^{-5}$				

## CHROMIUM SUPPLEMENTARY TABLE

TABLE 2a

Chromium Plating Tanks	1	2	3	4	5
ER <sub>2</sub> (lbs/hr)					
ER <sub>3</sub> (lbs/hr)					
(ER <sub>T</sub> - ER <sub>2</sub> ) (lbs/hr)					
(ER <sub>I</sub> - ER <sub>3</sub> ) (lbs/hr)					

# EMISSION FACTORS FOR CHROMIUM ELECTROPLATING <sup>a</sup>:

Table 12.20-1.

Process	Chromium Compounds		Emission Factor Rating	Total PM <sup>c</sup>		Emission Factor Rating
	grains/A-hr	grains/dscf		grains/A-hr	grains/dscf	
<b>Hard Chromium Electroplating <sup>d</sup></b>	0.12	N/A	B	0.25	N/A	C
-- with moisture extractor <sup>e</sup>	N/A	0.00014	D	N/A	0.00028	E
-- with polypropylene balls <sup>f</sup>	N/A	0.00042	D	N/A	0.00088	E
-- with fume suppressant <sup>g</sup>	N/A	0.00016	D	N/A	0.00034	E
-- with fume suppressant and polypropylene balls <sup>h</sup>	N/A	3.0 x 10 <sup>-5</sup>	D	N/A	6.3 x 10 <sup>-5</sup>	E
-- with packed-bed scrubber <sup>j</sup>	N/A	2.1 x 10 <sup>-5</sup>	D	N/A	4.4 x 10 <sup>-5</sup>	E
-- with packed-bed scrubber, fume suppressant, and polypropylene balls <sup>k</sup>	N/A	2.6 x 10 <sup>-6</sup>	D	N/A	5.5 x 10 <sup>-6</sup>	E
-- with chevron-blade mist eliminator <sup>m</sup>	N/A	8.8 x 10 <sup>-5</sup>	D	N/A	0.00018	E
-- with mesh-pad mist eliminator <sup>n</sup>	N/A	1.2 x 10 <sup>-5</sup>	D	N/A	2.6 x 10 <sup>-5</sup>	E
-- with packed-bed scrubber and mesh-pad eliminator <sup>p</sup>	N/A	3.2 x 10 <sup>-8</sup>	E	N/A	6.7 x 10 <sup>-8</sup>	E
-- with composite mesh-pad mist eliminator <sup>q</sup>	N/A	3.8 x 10 <sup>-6</sup>	D	N/A	8.0 x 10 <sup>-6</sup>	E
<b>Decorative Chromium Electroplating <sup>r</sup></b> (SCC 3-09-010-28)	0.033	N/A	D	0.069	N/A	E
-- with fume suppressant <sup>s</sup>	N/A	1.2 x 10 <sup>-6</sup>	D	N/A	2.5 x 10 <sup>-6</sup>	E

**a** For chromium electroplating tanks only. Factors represent uncontrolled emissions unless otherwise noted. Emission factors based on total energy input in units of grains per ampere-hour (grains/A-hr) and based on concentrations in units of grains per dry standard cubic foot (grains/dscf). To convert from grains/A-hr to mg/A-hr multiply by 64.8. To convert grains/dscf to mg/dscm, multiply by 2,290. To convert grains/A-hr to grains/dscf, multiply by 0.01. To convert grains/dscf to grains/A-hr multiply by 100. Note that there is considerable uncertainty in these latter two conversion factors because of differences in tank geometry, ventilation, and control device performance. For controlled emissions, factors based on concentration should be used whenever possible. SCC = Source Classification Code. NA = units not applicable.

**b** Comprised almost completely of hexavalent chromium.

**c** Total PM includes filterable and condensible PM. However, condensible PM is likely to be negligible. All PM from chromium electroplating sources is likely to be emitted as PM-10. Factors estimated based on assumption that PM consists entirely of chromic acid mist.

**d, e, f, g, h, j, k, m, n, p, q, r, s** - AP-42 References



## HYDROCHLORIC (HCl) ACID TANK TABLE

TABLE 3

HCl Pickle Tanks	1	2	3	4	5
A = Surface area of tank (ft <sup>2</sup> )	15				
T = Operating temperature (C°)	24				
Conc. = Percent concentration of HCL by weight (% w/w)	13				
V = Air velocity across surface of tank (fps)	0.084				
P <sub>v</sub> = Vapor pressure of HCl (mmHg from Table 3)	0.0235				
E = Evaporation rate from tank (lb/hr-ft <sup>2</sup> )	$1.547 \times 10^{-4}$				
ER <sub>1</sub> = Emission rate Uncontrolled (lb/hr)	$2.32 \times 10^{-3}$				
FE = Suppressant efficiency 1 - (%) / 100	0.05				
CE = Hood capture efficiency (%)	None				
AE= Abatement device efficiency 1 - (%) / 100	None				
ER <sub>4</sub> = Emission rate Controlled (lb/hr)					
FUG = Fugitive emissions (lb/hr)	$5.8 \times 10^{-5}$				
OY= Annual operating hours	4,800				
AFUG = Annual HCl fugitive emission rate (tons/year)	$1.39 \times 10^{-4}$				
AER = Annual HCl emission rate (tons/year)					

## HYDROCHLORIC ACID SUPPLEMENTARY TABLE

TABLE 3a

HCl Pickle Tanks	1	2	3	4	5
ER <sub>1</sub> (enter into TABLE 2) (lbs/hr)	$2.32 \times 10^{-4}$				
ER <sub>2</sub> (lbs/hr)	$1.16 \times 10^{-4}$				
ER <sub>3</sub> (lbs/hr)	$1.16 \times 10^{-4}$				
(ER <sub>2</sub> - ER <sub>3</sub> ) (lbs/hr)					
ER <sub>4</sub> (enter into TABLE 2) (lbs/hr)					

## HYDROCHLORIC (HCl) ACID TANK EMISSIONS CALCULATIONS

The following calculations are made with data provided by the applicant. To assist in these calculations, TABLE 3, TABLE 3a, and TABLEs 3-1 thru 3-4 (regarding partial pressures of HCl over aqueous solutions of HCl located in the Appendix) are provided for your use. A completed TABLE 3 and TABLE 3a, in addition to the applicant's calculations, will serve to expedite the permit review process.

1. Calculate the surface area (A) of each tank in square feet and enter the value of A into TABLE 3.

$$3\text{ft} \times 5\text{ft} = 15\text{ft}^2$$

2. Enter the operating temperature (T) in degrees centigrade (C°), acid concentration (Conc.) by weight percent, and air velocity (V) in feet per second (fps) across the surface of each tank into TABLE 3.

3. Determine the vapor pressure (P<sub>v</sub>) of the HCl solution from the attached TABLE 4. Using the temperature (T, C°) and the percent acid concentration (Conc.) determine the partial pressure of the solution in mmHg and enter the value of P<sub>v</sub> into TABLE 3.

$$\text{Interpolate between 12 \& 14\% @ 25}^\circ\text{C} = 0.0235$$

4. Calculate the evaporation rate of HCl from the tank using the following equation and enter the value of E (lb/hr-ft<sup>2</sup>) into TABLE 3 (Requires a calculator with logarithmic functions):

$$E = 25(0.46 + 0.117(V))\log[(760 - P_a)/(760 - P_v)] \text{ (lb/hr-ft}^2\text{)} \\ = (0.46+0.117) (0.084))\log[(760-0)/(760-0.02305)]=0.0001547$$

P<sub>a</sub> = 0 for this calculation

5. Calculate and enter into TABLE 3 and 3a the uncontrolled emission rate, ER<sub>1</sub>:

$$ER_1 = E \times A \text{ (lb/hr)}$$

$$ER_1 = 0.0001547 \times 15 = 2.3205 \times 10^{-3} \text{ (lb/hr)}$$

6. Do you use a suppressant (foam, fume, or mechanical) in your HCl tank? If yes, complete the following then go to 7. **Yes: 95% Efficient**

$$FE = (1 - (\%)/100), \text{ where \% is the efficiency of the suppressant.} \\ = (1-95/100) = 0.05$$

The efficiency of the suppressant can usually be found in the manufacturer's literature or by contacting the manufacturer of your particular suppressant. If you cannot determine the efficiency of your suppressant contact the TCEQ, Mechanical Section for guidance. Enter the value of FE into TABLE 3, then calculate the following (enter the value of ER<sub>2</sub> into TABLE 3a):

$$ER_2 = ER_1 \times FE \text{ (lbs/hr)}$$

$$ER_2 = (2.3205 \times 10^{-3} \text{ lb/hr}) (0.05) = 1.1603 \times 10^{-4} \text{ (lbs/hr)}$$

If you do not use a fume suppressant, complete the following (enter the value of  $ER_2$  into TABLE 2a) then go to 7.

$$ER_2 = ER_1$$

**7.** Do you use a capture hood on your HCl tank? If yes, complete the following appropriate calculation, then go to 10. If no, skip to 8. **No.**

If you use a hood, and do not use a fume suppressant, calculate the following (enter the value of  $ER_3$  into TABLE 3a), then go to 10:

$$ER_3 = ER_2 \times CE/100 \text{ (lbs/hr) (Hood, no fume suppressant)}$$

Note: CE is the percent capture efficiency of your hood design. Hoods designed in accordance with Industrial Ventilation, A Manual of Recommended Practice, can be conservatively considered to have 98% capture efficiency. If you use a hood, and also use a fume suppressant, calculate the following (enter the value of  $ER_3$  into TABLE 3a), then go to 10:

$$ER_3 = ER_2 \times CE/100 \text{ (lbs/hr) (Hood and a fume suppressant)}$$

**8.** If you do not use a capture hood, but use a fume suppressant use the following (enter the value of  $ER_3$  into TABLE 3a), then go to 12.

$$ER_3 = ER_2 \text{ (lbs/hr) (No hood, use a fume suppressant)}$$

$$= 1.1603 \times 10^{-4} \text{ (lbs/hr)}$$

If you do not use a capture hood, and also do not use a fume suppressant, then go to 9.

**9.** You will not be authorized to operate a HCl pickle tank without the use of, as a minimum, a fume suppressant or a capture hood.

**10.** Do you have an abatement device that controls the emissions from your hood exhaust? If yes, complete the following calculations, enter the values of AE and  $ER_4$  into TABLE 3, then go to 13. If not, then go to 11.

The efficiency of the abatement device you propose to use or are using, can be determined from the manufacturer's literature or by contacting the manufacturer directly. If the efficiency of your abatement device cannot be determined, contact the TCEQ Mechanical Section for guidance.

$$AE = [1-(\%)/100], \text{ where } \% \text{ is the abatement device efficiency.}$$

$$ER_4 = ER_3 \times AE \text{ (lbs/hr)}$$

**11.** Without an abatement device your hourly emission rate is the same as calculated in 7. Complete the following, enter the value of ER<sub>4</sub> into TABLES 3 and 3a, then go to 13:

$$ER_4 = ER_3 \text{ (lbs/hr)}$$

**12.** Calculate the hourly fugitive emission rate from the tank and enter the value of FUG into TABLE 3, then go to 14:

Fugitive emissions are those emissions that are not captured by a hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$$\begin{aligned} FUG &= (ER_3) (0.5) \text{ (lbs/hr) (Fume suppressant only)} \\ &= (1.1603 \times 10^{-4} \text{ lbs/hr})(0.5) = 5.8 \times 10^{-5} \text{ (lbs/hr)} \end{aligned}$$

**13.** Calculate the fugitive emission rate from the tank and enter the value of FUG into TABLE 3, then go to 15:

Fugitive emissions are those emissions that are not captured by the hood system and; therefore, escape into the building. These emissions are eventually emitted to the atmosphere through a building vent (exhaust fan, open door, window, etc.). You are given a 50% capture efficiency for the building.

$$FUG = (ER_2 - ER_3) (0.5) \text{ (lbs/hr)}$$

**14.** Calculate your annual fugitive emission rate (AFUG) and enter the value of AFUG into TABLE 2:

$$\begin{aligned} AFUG &= (FUG \times OY)/2000 \text{ (tons/year)} \\ &= (5.8 \times 10^{-5}) (4800 \text{ hrs/yr}) (\text{ton}/2000 \text{ lbs}) = 1.39 \times 10^{-4} \text{ tpy} \end{aligned}$$

**15.** Calculate your annual emission rate (AER) and the annual fugitive rate (AFUG) and enter the values of AER and AFUG into TABLE 3.

$$\begin{aligned} AER &= (ER_4 \times OY)/2000 \text{ (tons/year)} \\ AFUG &= (FUG \times OY)/2000 \text{ (tons/year)} \end{aligned}$$

# APPENDIX:

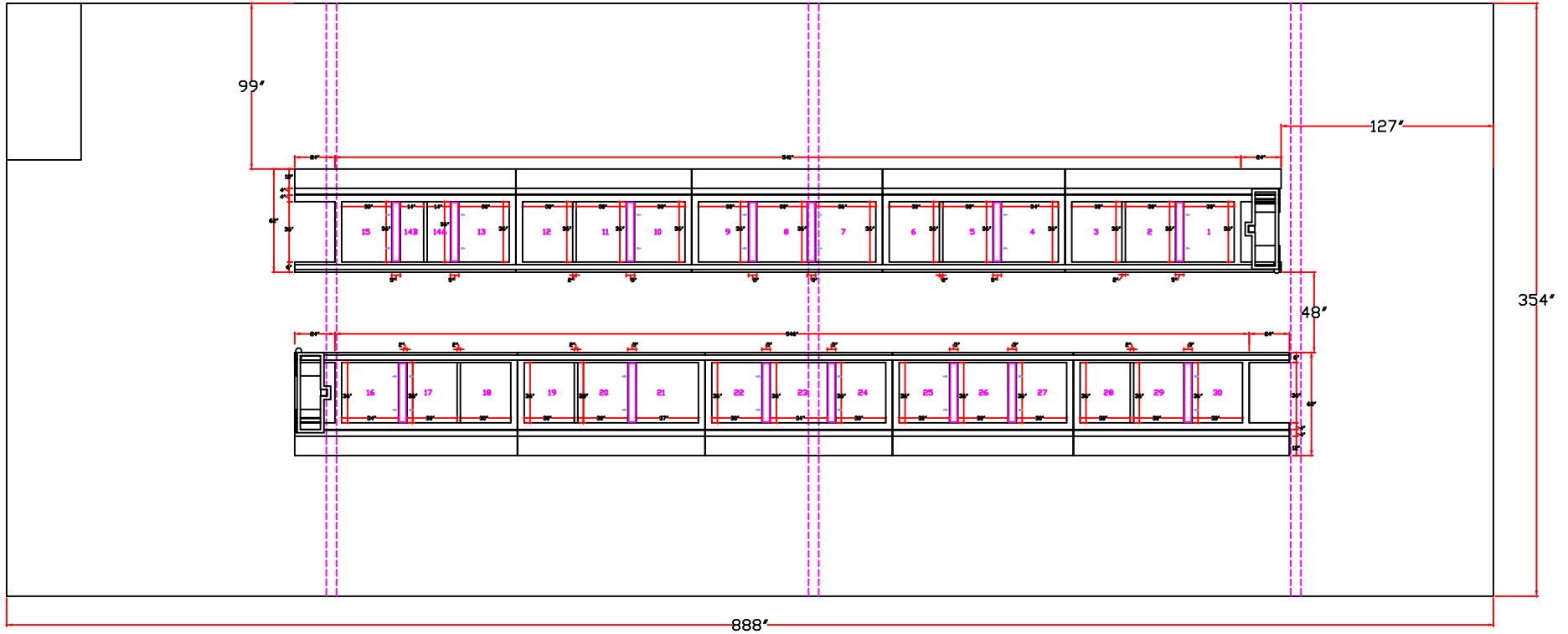
## PARTIAL PRESSURES ( $P_v$ ) OF HCl OVER AQUEOUS SOLUTIONS OF HCl


# **PARTIAL PRESSURES (P<sub>v</sub>) OF HCl OVER AQUEOUS SOLUTIONS OF HCl**

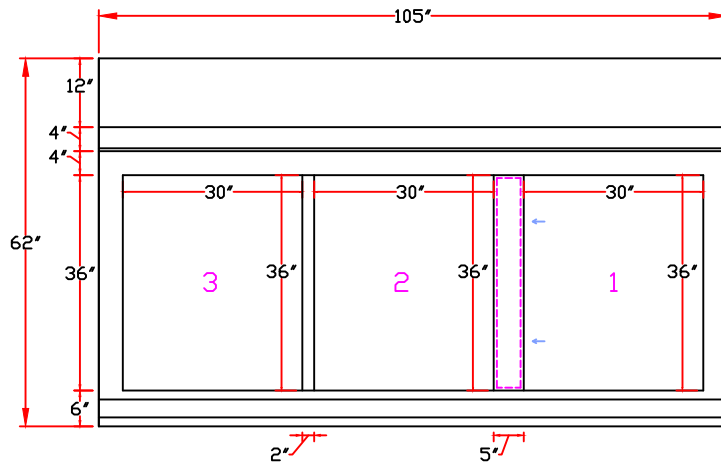
Table 3-4

Note: %HCL, weight percent; Temperature, centigrade (C°); partial pressures, mmHg.

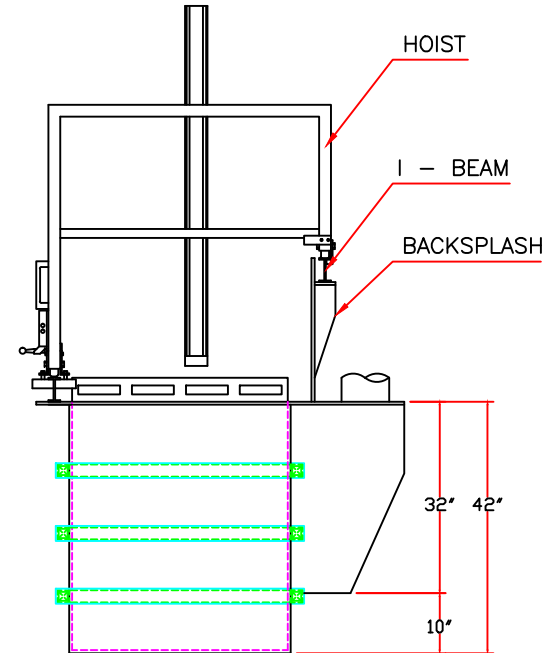
% HCl	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	60°	70°	80°	90°	100°	110°
<b>2</b>	...	...	0.0000117	0.000023	0.000044	0.000084	0.000151	0.000275	0.00047	0.00083	0.00104	0.0038	0.01	0.0245	0.058	0.132	0.28
<b>4</b>	0.000018	0.000036	0.000069	0.000131	0.00024	0.00044	0.00077	0.00134	0.0023	0.00385	0.0064	0.0165	0.0405	0.095	0.21	0.46	0.93
<b>6</b>	0.000066	0.000125	0.000234	0.000425	0.00076	0.00131	0.00225	0.0038	0.0062	0.0102	0.0163	0.04	0.094	0.206	0.44	0.92	1.78
<b>8</b>	0.000118	0.000323	0.000583	0.00104	0.00178	0.0031	0.00515	0.0085	0.0136	0.022	0.0344	0.081	0.183	0.39	0.82	1.64	3.1
<b>10</b>	0.00042	0.00075	0.00134	0.0232	0.00395	0.0067	0.0111	0.0178	0.0282	0.045	0.069	0.157	0.35	0.73	1.48	2.9	5.4
<b>12</b>	0.00099	0.00175	0.00305	0.0052	0.008	0.0145	0.0234	0.037	0.058	0.091	0.136	0.305	0.66	1.34	2.65	5.1	9.3
<b>14</b>	0.0024	0.00415	0.0071	0.0118	0.0196	0.0316	0.05	0.078	0.121	0.185	0.275	0.6	1.25	2.5	4.8	9	16
<b>16</b>	0.0056	0.0095	0.016	0.0265	0.0428	0.0685	0.106	0.163	0.247	0.375	0.55	1.17	2.4	4.66	8.8	16.1	28
<b>18</b>	0.0135	0.0225	0.037	0.06	0.095	0.148	0.228	0.345	0.515	0.77	1.11	2.3	4.55	8.6	15.7	28	48
<b>20</b>	0.0316	0.052	0.084	0.132	0.205	0.32	0.48	0.72	1.06	1.55	2.21	4.4	8.5	15.6	28.1	49	83
<b>22</b>	0.0734	0.119	0.187	0.294	0.45	0.68	1.02	1.5	2.18	3.14	4.42	8.6	16.3	29.3	52	90	146
<b>24</b>	0.175	0.277	0.43	0.66	1	1.49	2.17	3.14	4.5	6.4	8.9	16.9	31	54.5	94	157	253
<b>26</b>	0.41	0.64	0.98	1.47	2.17	3.2	4.56	6.5	9.2	12.7	17.5	32.5	58.5	100	169	276	436
<b>28</b>	1	1.52	2.27	3.36	4.9	7.05	9.9	13.8	19.1	26.4	35.7	64	112	188	309	493	760
<b>30</b>	2.4	3.57	5.23	7.6	10.6	15.1	21	28.6	39.4	53	71	124	208	340	542	845	...
<b>32</b>	5.7	8.3	11.8	16.8	23.5	32.5	44.5	60	81	107	141	238	390	623	970	...	...
<b>34</b>	13.1	18.8	26.4	36.8	50.5	68.5	92	122	161	211	273	450	720	...	...	...	...
<b>36</b>	29	41	56.4	78	105.5	142	188	246	322	416	535	860	...	...	...	...	...
<b>38</b>	63	87	117	158	210	277	360	464	598	758	955	...	...	...	...	...	...
<b>40</b>	130	176	233	307	399	515	627	830	...	...	...	...	...	...	...	...	...
<b>42</b>	253	332	430	560	709	900	...	...	...	...	...	...	...	...	...	...	...
<b>44</b>	510	655	840	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>46</b>	940	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...



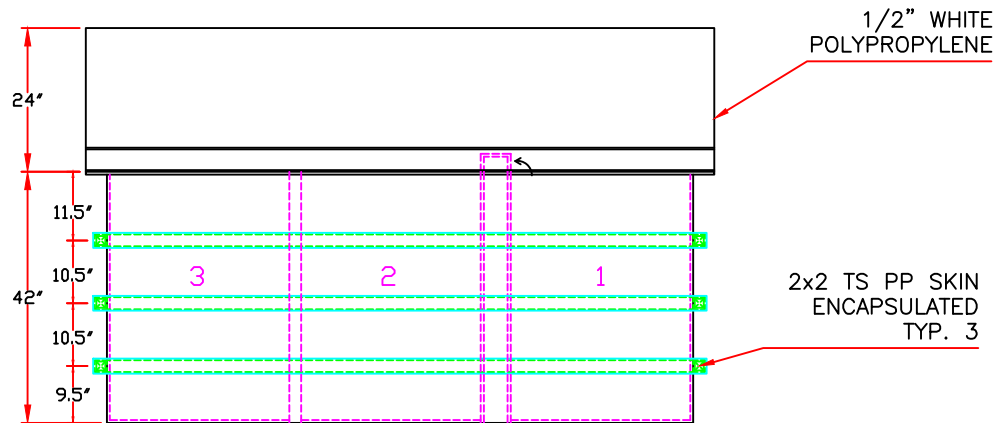
 <b>Ronatec C2C, Inc.</b> Solutions In Industry 5651 Palmer Way RH Carlsbad, Ca 92010 P (760) 451-9081 F (760) 946-7862	JOB NAME: <b>LINE</b>		DWG NO.  REV: 00
	DESCRIPTION: <b>LAYOUT</b>		
SCALE: NONE DATE: 06/13/2010 DRAWN BY: LR CHECKED BY:	SHEET: 1 OF 1		CAD FILE:



PLAN VIEW




SIDE VIEW



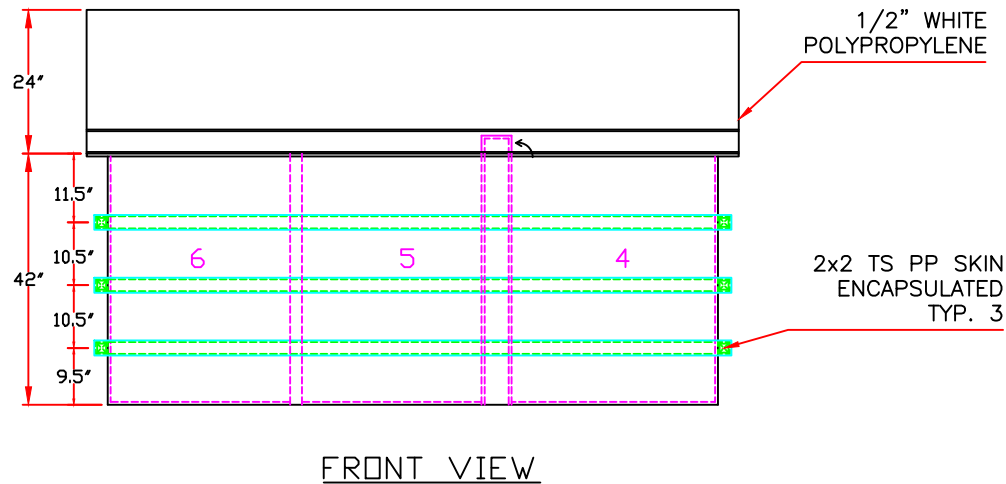
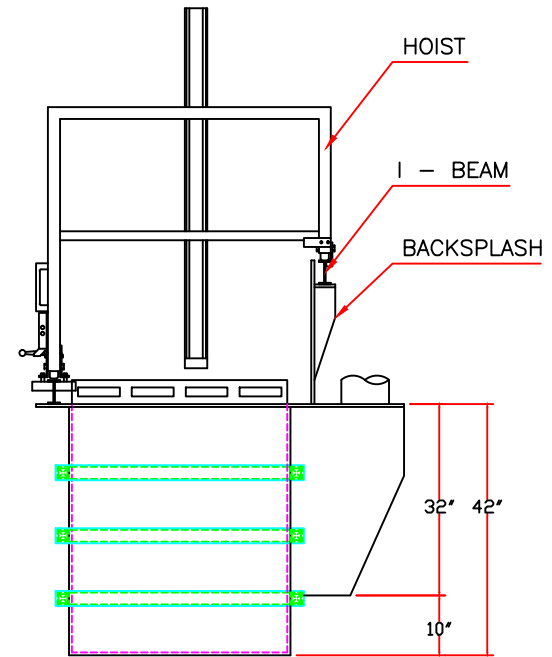
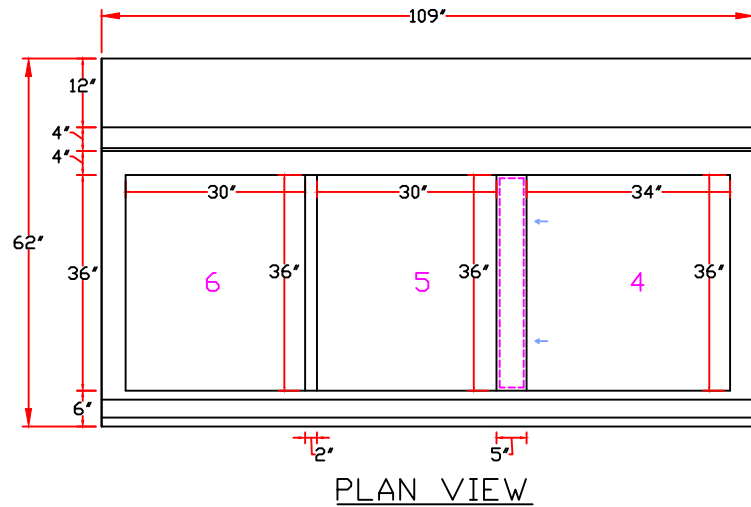
FRONT VIEW

MODULE #1  
TANK #1 -CAD STRIP  
TANK #2 -DRAG OUT RINSE  
TANK #3 -FINAL RINSE


 <b>Ronatec C2C, Inc.</b> Solutions In Industry 5651 Palmer Way #H Carlsbad, Ca 92010 P (760) 451-9081 F (760) 946-7862	JOB NAME:		LINE	
	DESCRIPTION:		MODULE #1	
SCALE: NONE DATE: 05/13/2019 DRAWN BY: I.R.	DWG NO.: CHECKED BY:		REV: 00 SHEET: 1 OF 1 CAD FILE:	

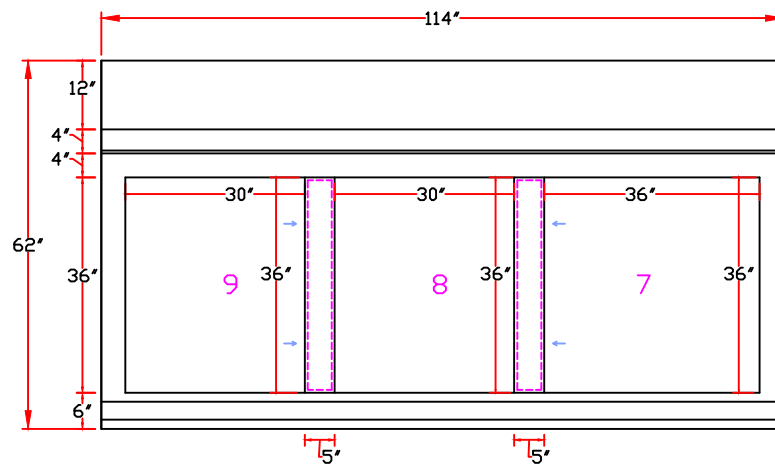




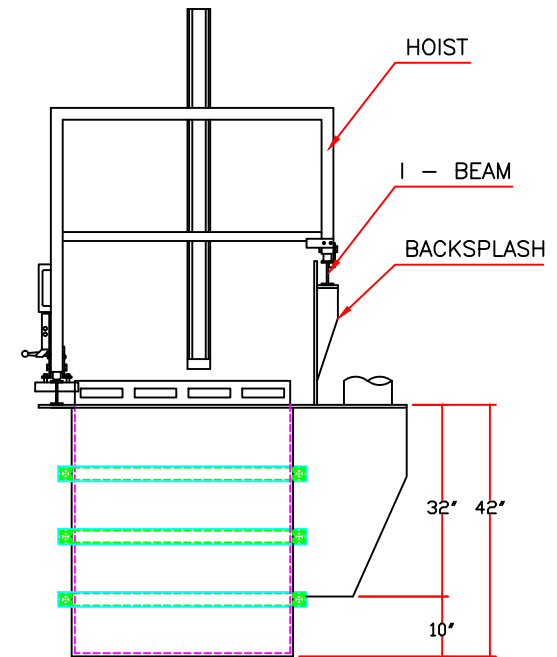


MODULE #2  
TANK #4 -SOAK CLEANER  
TANK #5 -COLD RINSE  
TANK #6 -FINAL RINSE

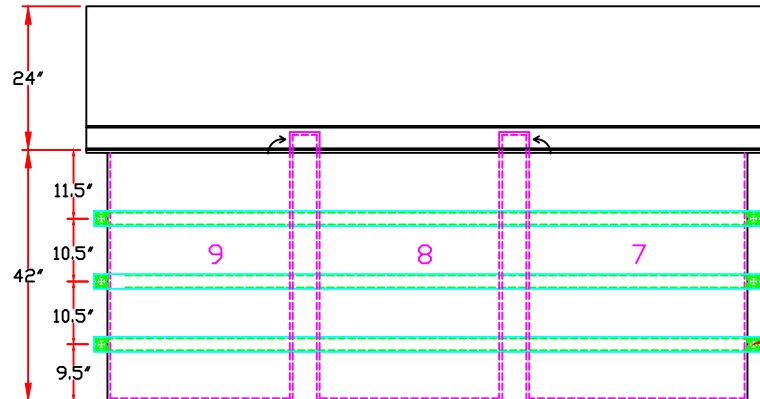
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SCALE: NONE DATE: 05/13/2019 DRAWN BY: I.R.	DWG NO. CHECKED BY:	SHEET: 1 OF 1	CAD FILE:	REV: 00



PLAN VIEW



SIDE VIEW




FRONT VIEW

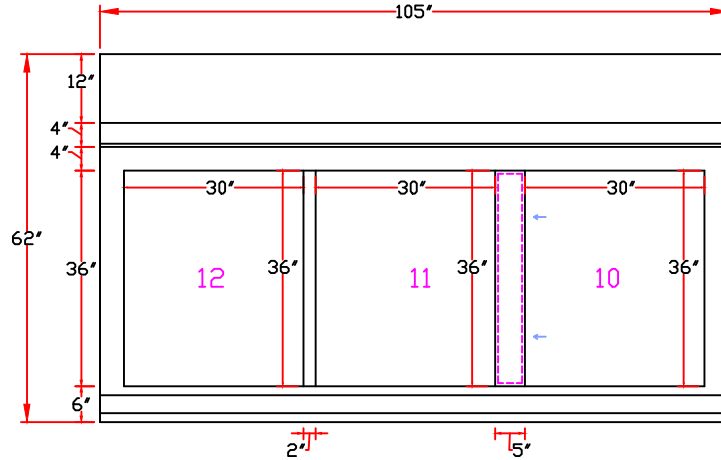
1/2" WHITE  
POLYPROPYLENE

2x2 TS PP SKIN  
ENCAPSULATED  
TYP. 3

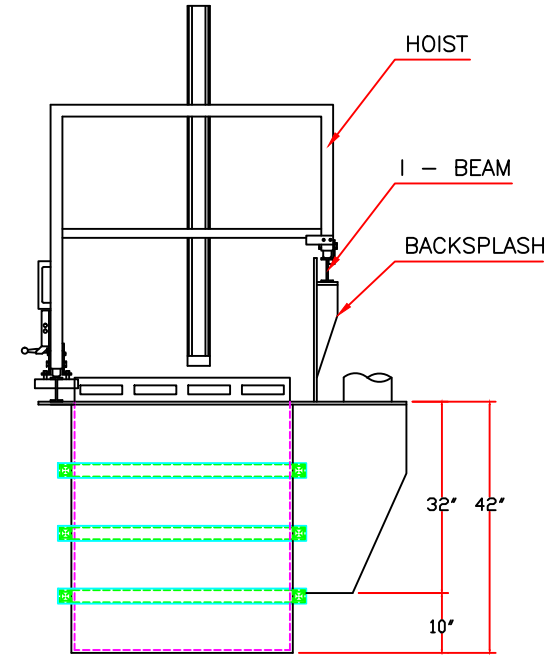
MODULE #3  
TANK #7 -LHE CAD  
TANK #8 -COLD RINSE  
TANK #9 -HOT RINSE

 <b>Ronatec C2C, Inc.</b> Solutions In Industry 5651 Palmer Way #H Carlsbad, Ca 92010 P (760) 451-9081 F (760) 946-7862	JOB NAME: <b>LINE</b>	
	DESCRIPTION: <b>MODULE #3</b>	
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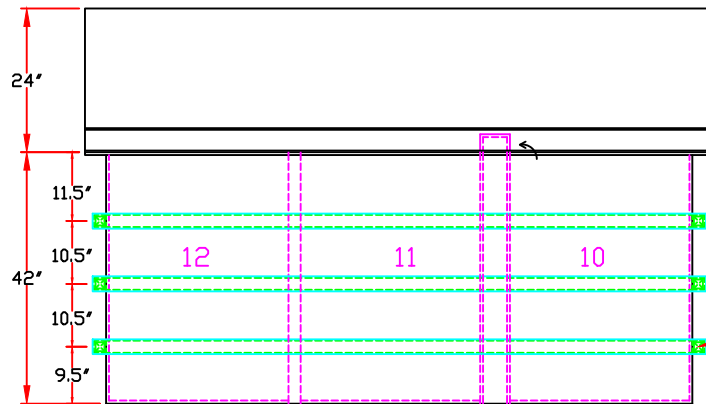




PLAN VIEW



SIDE VIEW




FRONT VIEW

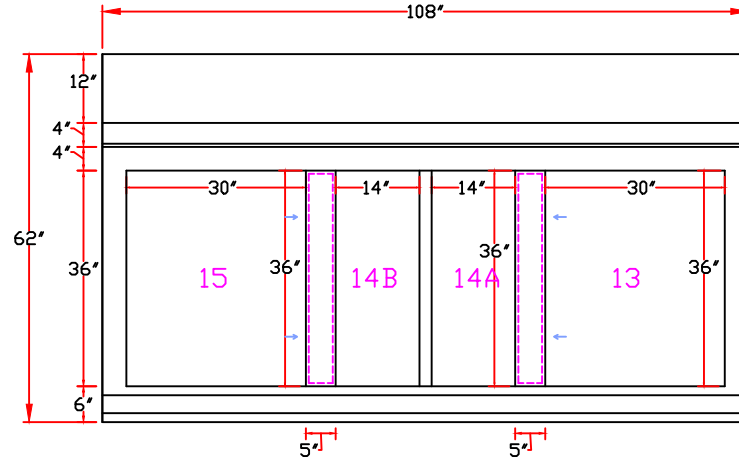
MODULE #4  
TANK #10 -BRIGHT CAD  
TANK #11 -DRAG OUT RINSE  
TANK #12 -HOT WATER

1/2" WHITE  
POLYPROPYLENE

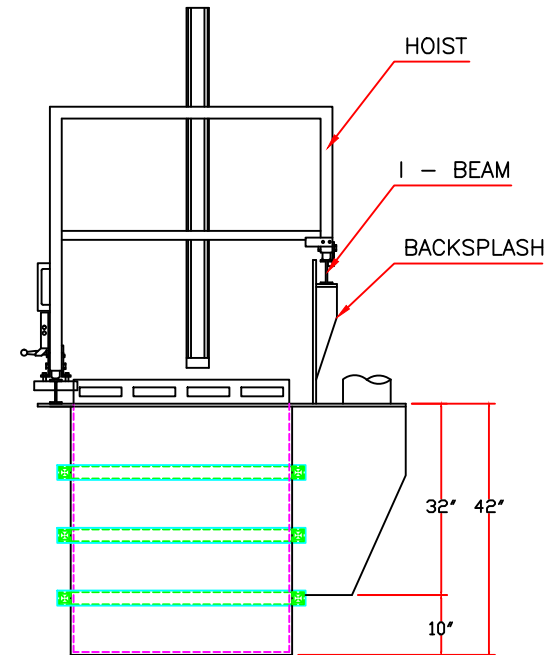
2x2 TS PP SKIN  
ENCAPSULATED  
TYP. 3

 <b>Ronatec C2C, Inc.</b> Solutions In Industry 5651 Palmer Way #H Carlsbad, Ca 92010 P (760) 451-9081 F (760) 946-7862	JOB NAME:		LINE	
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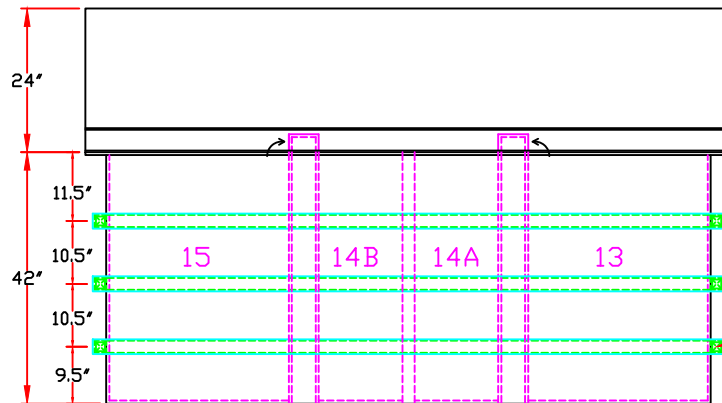




PLAN VIEW



SIDE VIEW




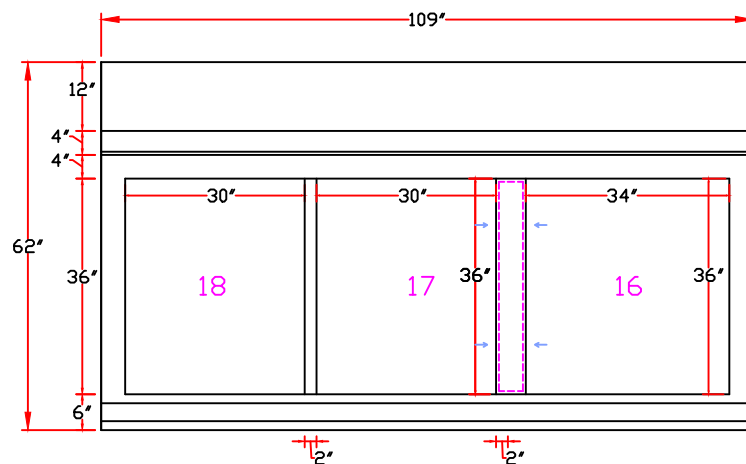
FRONT VIEW

1/2" WHITE  
POLYPROPYLENE

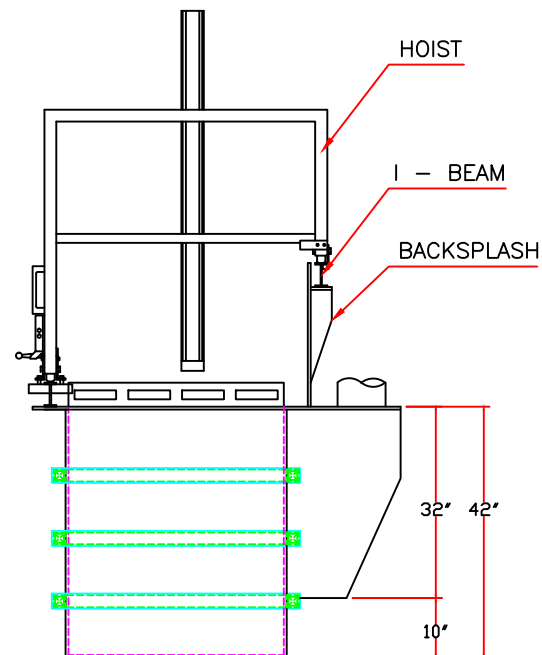
2x2 TS PP SKIN  
ENCAPSULATED  
TYP. 3

MODULE #5  
TANK #13 -HCL  
TANK #14A -RINSE  
TANK #14B -RINSE  
TANK #15 -NI STRIKE

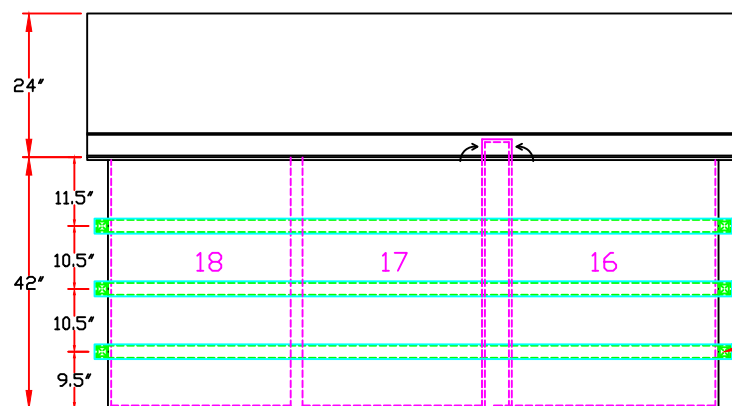
 <b>Ronatec C2C, Inc.</b> Solutions In Industry 5651 Palmer Way #H Carlsbad, Ca 92010 P (760) 451-9081 F (760) 946-7862	JOB NAME: <b>LINE</b>	
	DESCRIPTION: <b>MODULE #5</b>	
SCALE: NONE DATE: 05/13/2019 DRAWN BY: I.R.	DWG NO. CHECKED BY:	REV: 00
0 1" SCALE ORIGINAL 1" SCALE	SHEET: 1 OF 1	CAD FILE:



PLAN VIEW



SIDE VIEW




FRONT VIEW

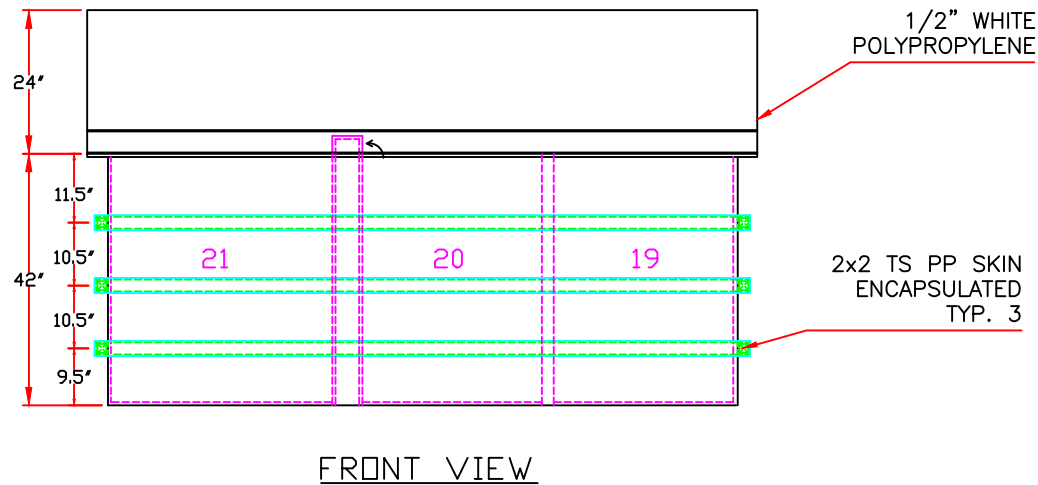
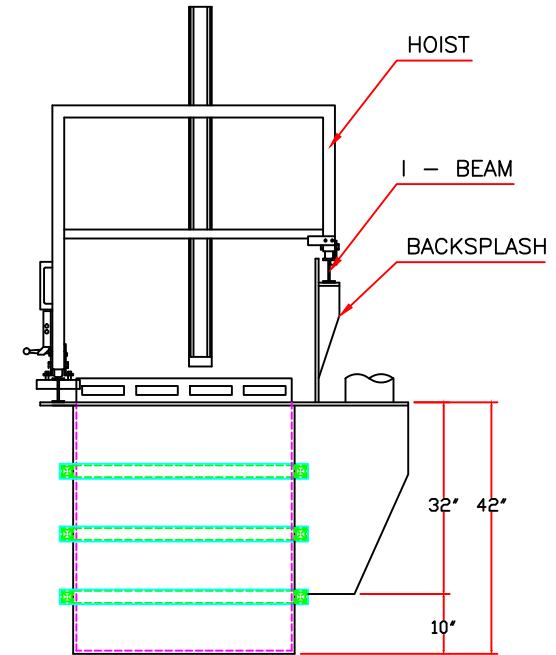
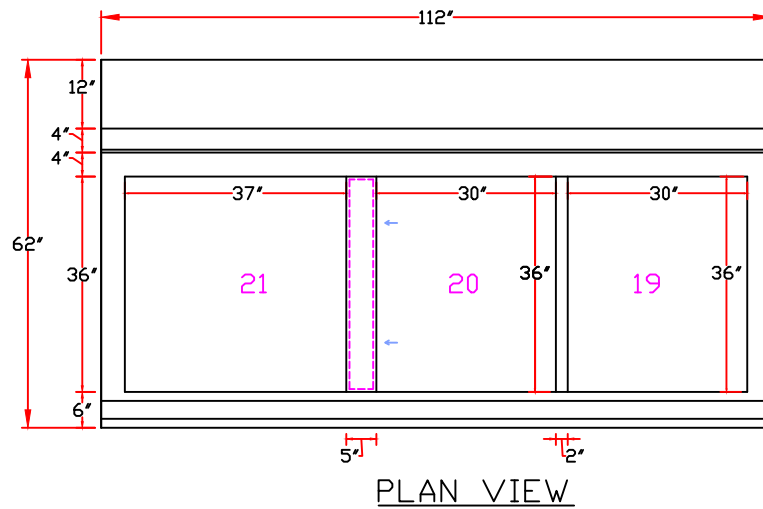
1/2" WHITE POLYPROPYLENE

2x2 TS PP SKIN  
ENCAPSULATED  
TYP. 3

**MODULE #6**


TANK #16 -CHROME TANK  
TANK #17 -CHROME TANK  
TANK #18 -HOT WATER

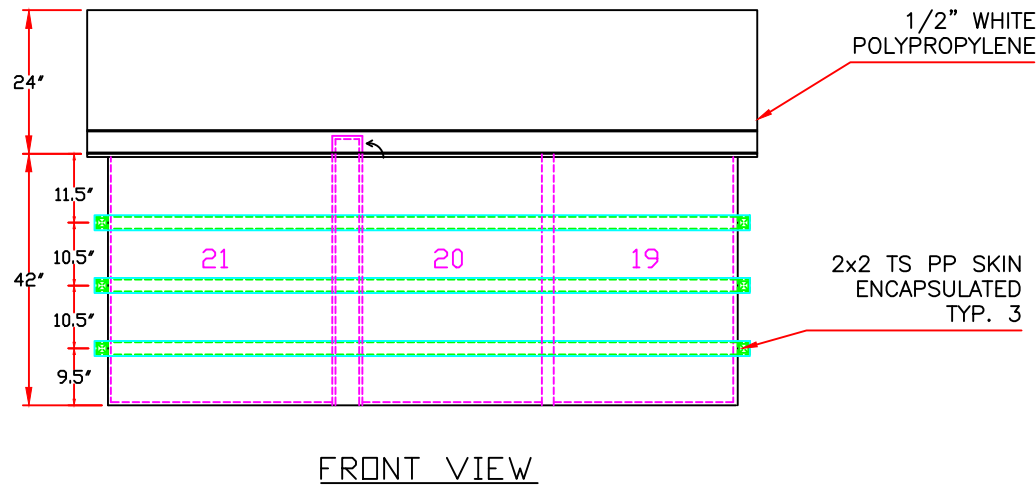
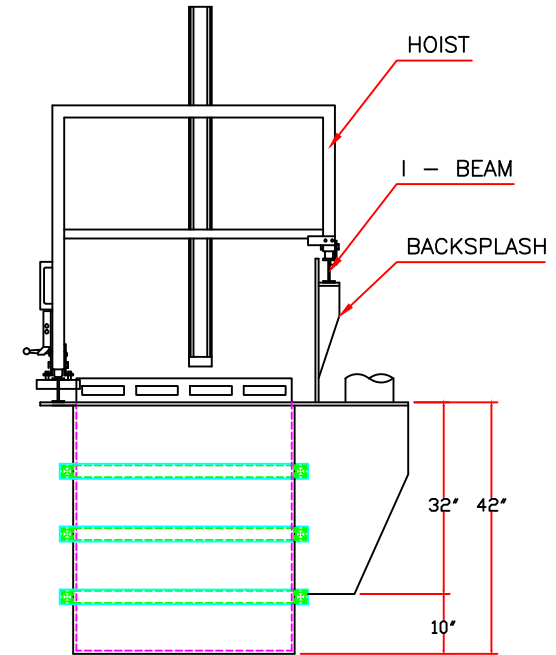
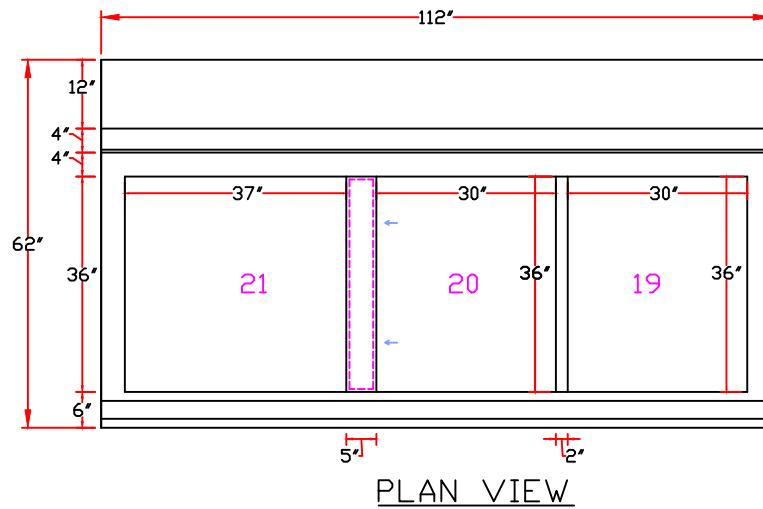
 <p><b>Ronatec C2C, Inc.</b> Solutions In Industry 5651 Palmer Way #H Carlsbad, Ca 92010 P (760) 451-9081 F (760) 946-7862</p>	<p>SCALE: NONE</p> <p>DATE: 05/13/2019</p> <p>DRAWN BY: I.R.</p>		<p>JOB NAME:</p> <p>LINE</p>		<p>REV:</p> <p>00</p>
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<p>ORIGINAL 1" SCALE</p>		<p>SHEET: 1 OF 1</p>		<p>CAD FILE:</p>	



#### MODULE #7


TANK #19 -FINAL RINSE  
TANK #20 -PASSIVATE  
TANK #21 -COLD RINSE

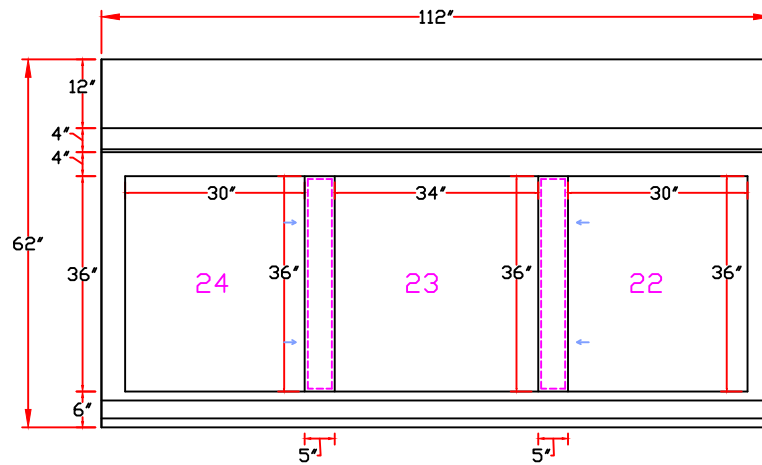
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SCALE: NONE DATE: 05/13/2019 DRAWN BY: I.R.	DWG NO. 00	SHEET: 1 OF 1



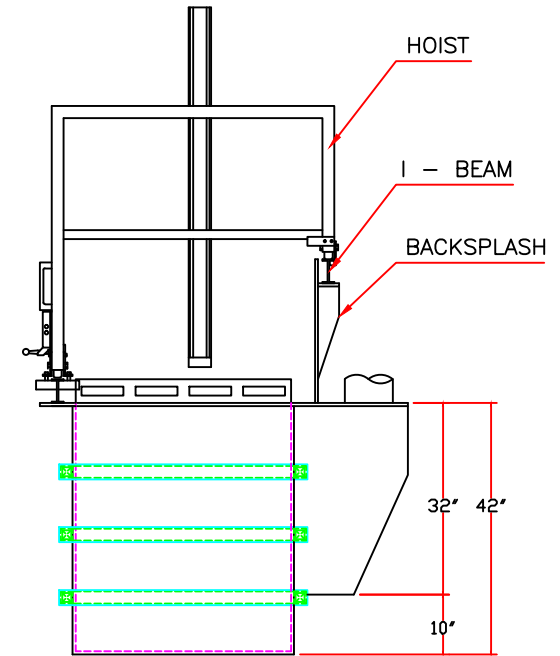
#### MODULE #7

TANK #19 -FINAL RINSE  
TANK #20 -PASSIVATE  
TANK #21 -COLD RINSE

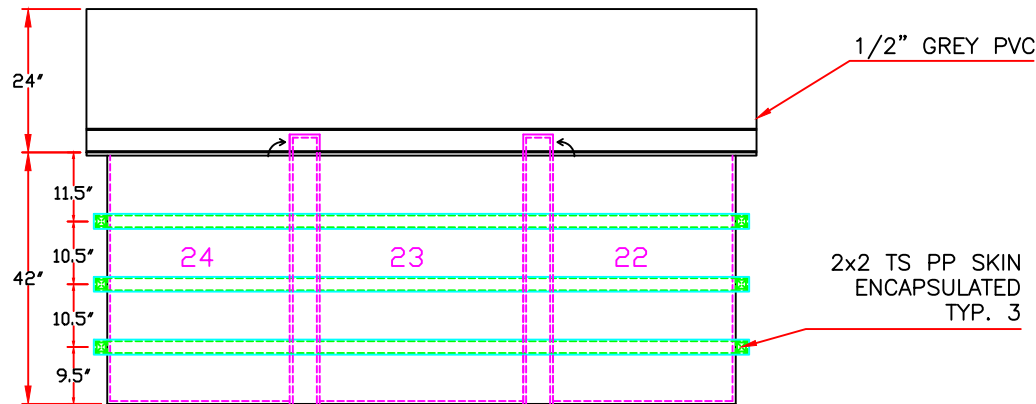
 <b>Ronatec C2C, Inc.</b> Solutions In Industry 5651 Palmer Way #H Carlsbad, Ca 92010 P (760) 451-9081 F (760) 946-7862	JOB NAME: LINE	
	DESCRIPTION: MODULE #7	
SCALE: NONE DATE: 05/13/2019 DRAWN BY: I.R.	DWG NO. 00	REV: 00
ORIGINAL 1" SCALE	CHECKED BY:	SHEET: 1 OF 1 CAD FILE:



PLAN VIEW




SIDE VIEW



FRONT VIEW

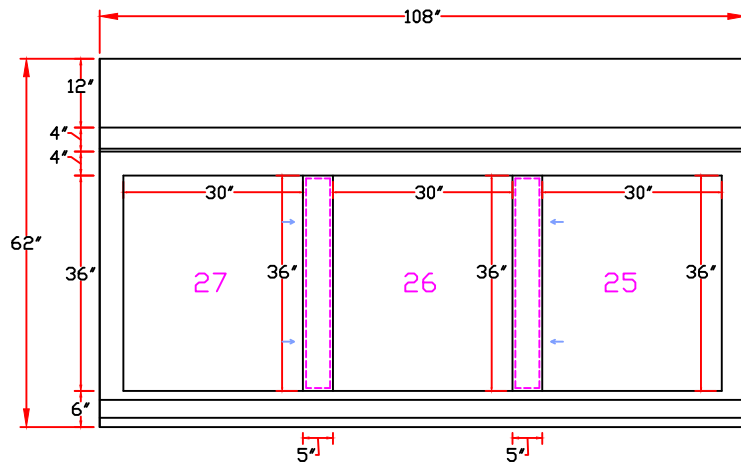
**MODULE #8**

TANK #22 -MAINTENANCE TANK  
TANK #23 -COLD RINSE  
TANK #24 -DFOX

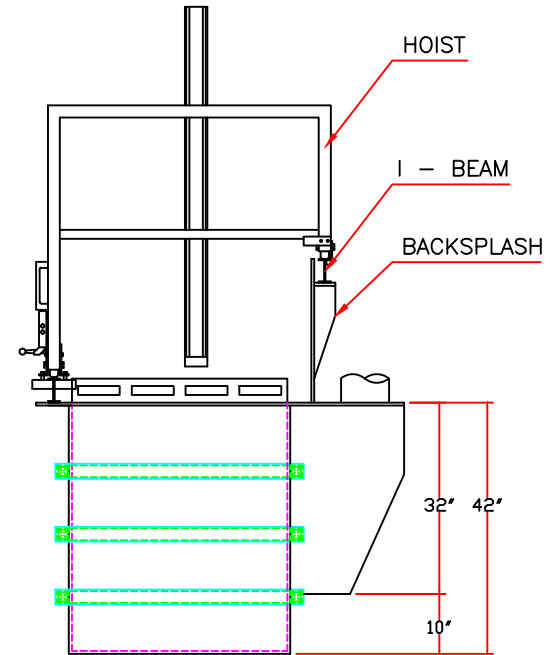
 <b>Ronatec C2C, Inc.</b> Solutions In Industry 5651 Palmer Way #H Carlsbad, Ca 92010 P (760) 451-9081 F (760) 946-7862	JOB NAME: LINE	
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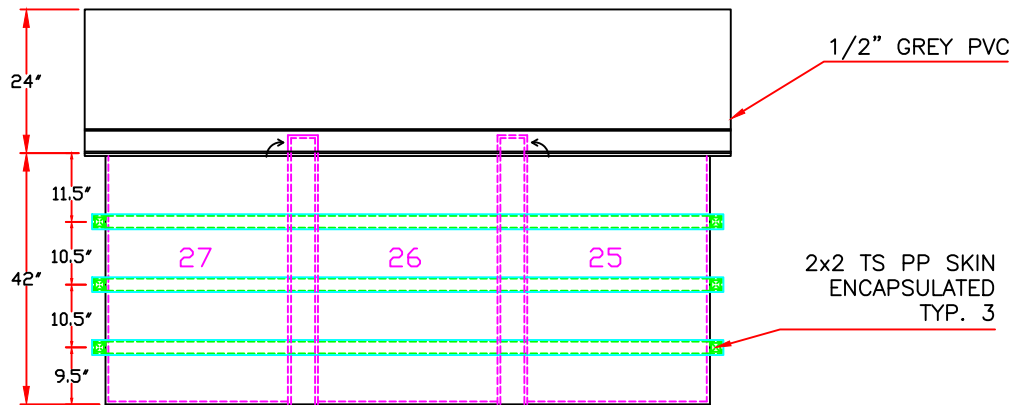




PLAN VIEW




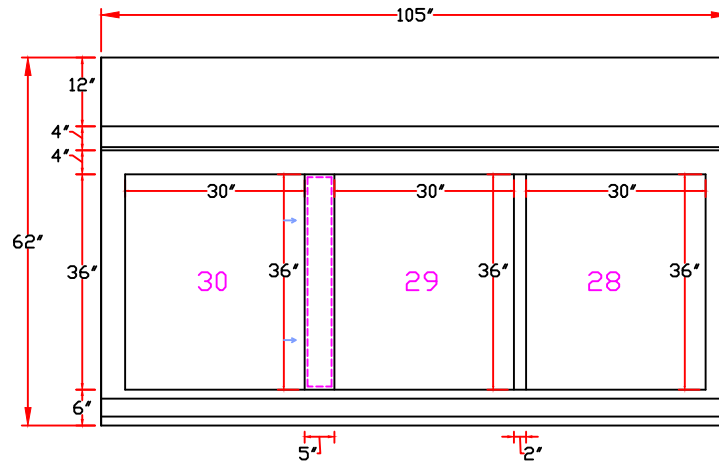
SIDE VIEW



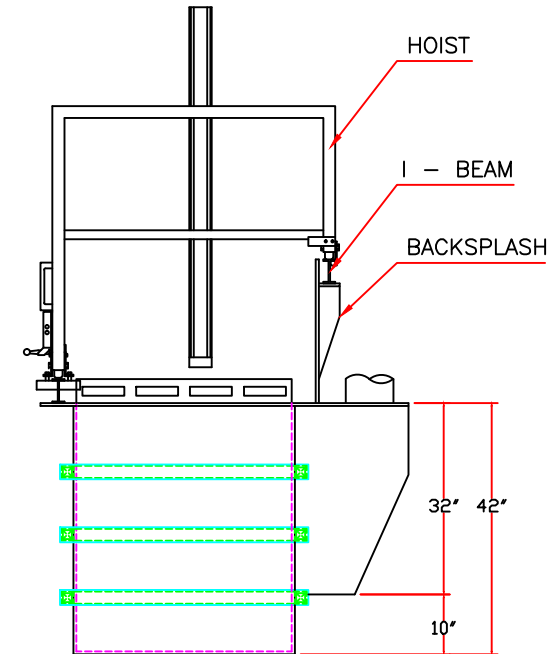
FRONT VIEW

MODULE #9  
TANK #25 -HOT RINSE  
TANK #26 -COLD RINSE  
TANK #27 -MAINTENANCE TANK

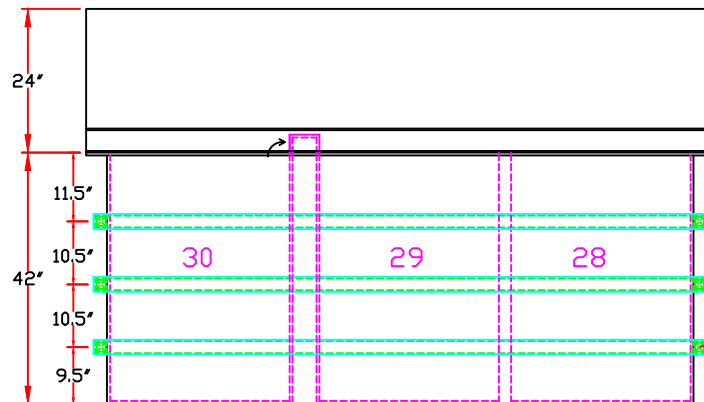
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SCALE: NONE DATE: 05/13/2019 DRAWN BY: I.R.	DWG NO.: CHECKED BY:	SHEET: 1 OF 1 CAD FILE:	REV: 00	



PLAN VIEW



SIDE VIEW




FRONT VIEW

1/2" WHITE  
POLYPROPYLENE

2x2 TS PP SKIN  
ENCAPSULATED  
TYP. 3

**MODULE #10**

TANK #28 -RINSE  
TANK #29 -DRAG OUT RINSE  
TANK #30 -SOAK CLEAN

 <p><b>Ronatec C2C, Inc.</b> Solutions In Industry 5651 Palmer Way #H Carlsbad, Ca 92010 P (760) 451-9081 F (760) 946-7862</p>	<p>JOB NAME:</p> <p>LINE</p>	
	<p>DESCRIPTION:</p> <p>MODULE #10</p>	
<p>SCALE: NONE</p> <p>DATE: 05/13/2019</p> <p>DRAWN BY: I.R.</p>	<p>DWG NO.</p> <p>CHECKED BY:</p>	<p>REV: 00</p> <p>SHEET: 1 OF 1</p> <p>CAD FILE:</p>

# Cadmium (LHE & Bright) Process Line - Solution Matrix

<div>#1 Cad Strip</div> <div>Dimensions</div> <div>30 x 36 x 42 Freeboard: 6 to 8 inches (7" optimum) Total Volume = 196 gal Filled Volume = 164 gal</div>	<div>BAC5771J Solution # 1</div>	<div>Ammonium Nitrate as NH4NO3</div>	Monthly	179 lbs 6 oz	14.0 <sup>opg</sup>	15.8 <sup>opg</sup>	17.5 <sup>opg</sup>	19.3 <sup>opg</sup>	21.0 <sup>opg</sup>	
		<div>pH (adjust with NaOH)</div>		Adjust	6.0	--	--	--	9.0	
		Temperature	As used	---	Ambient					
		Ammonium Nitrate is an explosive and should be stored in a area free from combustible materials, without open drains, traps, tunnels, pits, or pockets where molten ammonium nitrate could flow and be confined in the event of fire.								

**Note: 1 - Where multiple specifications require conflicting control limits, the tightest limits are indicated**

**2 – Filled volume is the working volume based on a 7 inch freeboard**

**Cadmium (LHE & Bright) Process Line - Solution Matrix**

Support Solutions									
Tank ID & Description	Solution Control Specifications	Constituent	Analysis Frequency	New Make Up	Spec Low	Target Low	Optimum	Target High	Spec High
<b># 4 Alkaline Soak Cleaner</b>	SOPM 20-10-32 BAC5749 SOPM 20-30-03	Oakite 61B	Weekly	63 lbs 10 oz	3 opg	4.25 opg	5.5 opg	6.75 opg	8 opg
<b>Dimensions</b>  34 x 36 x 42 Freeboard: 6 to 8 inches (7" optimum) Total Volume = 223 gal Filled Volume = 185 gal		pH		Adjust	12.4	12.5	12.6	12.7	12.8
		Temperature	As used	---	160 °F	---	---	---	190 °F
<b># 15 Woods Nickel Strike</b>	SOPM 20-42-09 High Chloride Solution	Nickel Chloride as (NiCl <sub>2</sub> • 6H <sub>2</sub> O)	Weekly	333 lbs or 55.5 gals	30 opg	31 opg	32.5 opg	34 opg	35 opg
<b>Dimensions</b>  30 x 36 x 42 Freeboard: 6 to 8 inches (7" optimum) Total Volume = 196 gal Filled Volume = 164 gal		Hydrochloric Acid 22° Be°		17 gals	15 opg	15.5 opg	16.0 opg	16.5 opg	17.0 opg
		Temperature	As used	---	60 °F	---	---	---	100 °F
		Iron	Monthly	---				0.8 opg	1 opg
		Copper	Remove copper contamination as specified in Paragraph 5.B.(1) if you get dark deposits on the nickel plating or metallic copper immersion deposits on ferrous surfaces.						
<b>#13 Hydrochloric Acid</b>	BAC5625 Solution 1	Hydrochloric Acid	Weekly	88.5 gals (54 gals / 100 gals)	28.0 opg	opg	33.0 opg	opg	38.0 opg
<b>Dimensions</b>  30 x 36 x 42 Freeboard: 6 to 8 inches (7" optimum) Total Volume = 196 gal Filled Volume = 164 gal	BAC5632 Dilute HCL	Ambienol C		8 pints (5 pints / 100 gals)	Add 1 fl oz with each gallon of hydrochloric acid added				
		Temperature	As used	--	Ambient				
		Iron	---	---	---	---	---	4.0 opg	5.0 opg
		Copper	---	---	---	---	---	0.3 opg	0.5 opg

**Cadmium (LHE & Bright) Process Line - Solution Matrix**

Tank ID & Description	Solution Control Specifications	Constituent	Analysis Frequency	New Make Up	Spec Low	Target Low	Optimum	Target High	Spec High
<div># 7 LHE Cadmium</div> <div>Dimensions</div> <div>36 x 36 x 42 Freeboard: 6 to 8 inches (7" optimum) Total Volume = 236 gal Filled Volume = 196 gal</div>	<div>SOPM 20-42-01 BAC5718</div> <div>Compliant with: AMS QQ P 416</div>	Cadmium Metal	Weekly	98 lbs * Cad Oxide	6.5 opg	6.8 opg	7.0 opg	7.2 opg	7.5 opg
		Total Sodium Cyanide		294 lbs	20.0opg	22.0 opg	24.0 opg	26.0 opg	28.0 opg
		Sodium Hydroxide		0 lbs	3.5 opg	3.8 opg	4.25 opg	4.7 opg	5.0 opg
		Sodium Carbonate	Monthly	6 lbs (To stabilize)	---	---	---	7 opg	8 opg
		Temperature	As used	---	70 °F	---	---	---	85 °F
		Anodes: Cadmium, A–A–51126 or equivalent							
		Agitation – Circulation pump							
		Filtration –							
<div># 10 Bright Cadmium</div> <div>Dimensions</div> <div>30 x 36 x 42 Freeboard: 6 to 8 inches (7" optimum) Total Volume = 196 gal Filled Volume = 164 gal</div>	<div>SOPM 20-42-05 Colcad 100 TDS</div> <div>Compliant with: AMS QQ P 416 BAC5701</div>	Cadmium Metal	Weekly	40 lbs * Cad Oxide	2.3 opg	2.8 opg	3.4 opg	3.9 opg	4.5 opg
		Sodium Cyanide	Weekly	135 lbs 5 oz	9.0 opg	11.1 opg	13.2 opg	15.3 opg	17.5 opg
		Sodium Hydroxide	Weekly	0 lbs	1.6 opg	2.0 opg	2.4 opg	2.8 opg	3.2 opg
		Sodium Carbonate	Monthly	5 lbs (To stabilize)	—	—	—	7 opg	8 opg
		Colcad 100	Weekly	1.6 gals	0.75%BV	0.85%BV	1.0%BV	1.15%BV	1.25%BV
		Temperature	As used	---	Ambient				
		Anodes: Cadmium Anodes, A–A–51126							
		Agitation – Circulation pump							
		Filtration -							

\* Cadmium solution make up: Completely dissolve Sodium Cyanide prior to the addition of Cadmium Oxide



## Chemfilm &amp; Chromate Process Line - Solution Matrix

Tank ID & Description	Solution Control Specifications	Constituent	Analysis Frequency	New Make Up	Spec Low	Target Low	Optimum	Target High	Spec High
<b>#16</b> <b>Chemfilm</b> Type 1 - Class C  <b>Dimensions</b>  30 x 36 x 42 Freeboard: 6 to 8 inches (7" optimum) Total Volume = 196 gal Filled Volume = 164 gal	Bonderite M-CR 1200s Aero TDS 1 BAC 5719AA SOPM 20-43-03  <u>Compliant with:</u> Mil C 5541E Mil DTL 5541F Class 1A Optional: Class 3	1200s Aero Concentration	Weekly	12 lbs 4 oz (1.2 oz/gal)	1.0 opg	1.1 opg	1.2 opg	1.5 opg	13.0 opg
		* pH		Adjust with Nitric (42 °Be°)	1.3	---	1.4	---	1.8
		Temperature	As used	---	160 °F	---	---	---	100 °F
		* pH is controlled by adding 1/2 pint of 42 °Be° Nitric Acid / 2 to 4 lbs of 1200s AERO added. <b>Add Nitric Acid simultaneously with 1200s Aero &amp; Do not make bulk additions of Nitric Acid</b>							
		Agitation is not required in the bath other than to free entrapped air bubbles. However, moderate agitation, mechanical, circulation pump or clean air, improves coating uniformity and accelerates coating reaction slightly.  Filtration – not required							
<b>#17</b> <b>Chromate</b>  <b>Dimensions</b>  30 x 36 x 42 Freeboard: 6 to 8 inches (7" optimum) Total Volume = 196 gal Filled Volume = 164 gal	Ultrachromate 300 TDS BAC 5718  <u>Compliant with:</u>	Ultrachromate 300	Weekly	32.8 gals (20 gals /100 gals)	5.0 opg	6.0 opg	7.0 opg	8.0 opg	10.1 opg
		* pH		Adjust as needed	0.8	0.9	0.9	1.0	1.1
		Temperature	As used	---	65 °F	---	---	---	95 °F
		* pH may also be adjusted by addition of sulfuric acid or sodium hydroxide Raise CrO3 and lower pH by addition of Ultrachromate 300 Concentrate  Air agitation is recommended							
		Filtration –							

Support Solutions									
Tank ID & Description	Solution Control Specifications	Constituent	Analysis Frequency	New Make Up	Spec Low	Target Low	Optimum	Target High	Spec High
<b># 30</b> <b>Alkaline Soak Clean</b>  <b>Dimensions</b> 30 x 36 x 42 Freeboard: 6 to 8 inches (7" optimum) Total Volume = 196 gal Filled Volume = 164 gal	BAC5749	Oakite 61B	Weekly	56.25 lbs	3 opg	4.25 opg	5.5 opg	6.75 opg	8 opg
		pH		Adjust	12.4	12.5	12.6	12.7	12.8
	<u>Compliant with:</u>	Temperature	As used	---	160 °F	---	---	---	190 °F
<b># 24</b> <b>Deoxidizer</b>  <b>Dimensions</b> 30 x 36 x 42 Freeboard: 6 to 8 inches (7" optimum) Total Volume = 196 gal Filled Volume = 164 gal	BAC 5765 Method 1 Solution 13A  <u>Compliant with:</u>	Nitric Acid 42° Be`	Weekly	32.8 gals (20 gals/100 gals)	150 g/L 10% BV	225 g/L 15 % BV	300 g/L 20% BV	375 g/L 25 %BV	450 g/L 30 % BV
		Temperature	As used	---	120 °F	---	---	---	140 °F
<b># 20</b> <b>Passivate</b>  <b>Dimensions</b> 30 x 36 x 42 Freeboard: 6 to 8 inches (7" optimum) Total Volume = 196 gal Filled Volume = 164 gal	BAC 5625 Method II Procedure A Solution 14  <u>Compliant with:</u> AMS-QQ-P-35 AMS 2700.	Nitric Acid 42° Be`	Weekly	44 gals	34 opg	42 opg	51 opg	59 opg	67 opg
		Temperature	As used	---	Ambient				

**Note: 1 - Where multiple specifications require conflicting control limits, the tightest limits are indicated**

**2 – Filled volume is the working volume based on a 7 inch freeboard**

# **Methods for Estimating Air Emissions from Chemical Manufacturing Facilities**

**August 2007**

**Final**



Prepared for  
Emission Inventory Improvement Program

Prepared by  
Mitchell Scientific, Inc.  
Westfield, NJ

RTI International  
Research Triangle Park, NC



$$E_{wt-toluene} = (0.0108 \text{ lb-moles})(92.13 \text{ lb/lb-mole}) = 0.995 \text{ lbs}$$

**Step 5. Calculate the emission of air without the gas sweep present.**

$$E_{n-nc} = n_{nc,1} - n_{nc,2} = 0.1685 - 0.1085 = 0.06 \text{ moles}$$

**Step 6. Calculate the moles of gas sweep.**

$$E_{n-gas \text{ sweep}} = \left[ \frac{760 \times (3 \text{ scfm} \times 60 \text{ min})}{998.9 \times 273.15} \right] = 0.501 \text{ moles air}$$

**Step 7. Calculate the toluene emissions while taking the gas sweep into account with a 25% saturation level.**

$$E_{n-toluene} = \left( \frac{0.06 + (0.25 \times 0.501)}{0.06} \right) \times 0.0108 = 3.08 \times 0.0108 = 0.0333 \text{ lb moles}$$

$$E_{wt-toluene} = (0.0333 \text{ lb-moles})(92.13 \text{ lb/lb-mole}) = 3.068 \text{ lbs}$$

$$E_{n-nc} = 0.06 + 0.501 = 0.561 \text{ lb-moles}$$

$$E_{wt-nc} = (0.561 \text{ lb-moles})(28.97 \text{ lb/lb-mole}) = 16.25 \text{ lbs}$$

## 3.7 Evaporation Models

### 3.7.1 Evaporation from an Open Top Vessel or a Spill

The rate of vaporization of a liquid can be modeled as a function of several characteristic factors of the compound being considered. [Crowl & Louvar, 2002]

$$E_{n-i} = \frac{M_i K_i A (P_i^{sat} - P_i)}{RT_L} \quad \text{Eq. 3-23}$$

Where  $E_n$  is the evaporation rate (mass/time).

$M_i$  is the molecular weight of the volatile substance,

$K_i$  is a mass transfer coefficient (length/time),

$A$  is the evaporation surface area,

$P_i^{sat}$  is the saturated solvent vapor pressure,

$P_i$  is the actual vapor pressure near the liquid surface,

$R$  is the ideal gas constant, and

$T_L$  is the absolute temperature of the liquid.

For many cases,  $P_{sat} \gg p$ , and Eq. 3-23 may be simplified to

$$E_{n-i} = \frac{M_i K_i A P_i^{sat}}{RT_L} \quad \text{Eq. 3-24}$$

Eq. 3-24 may be used to estimate the vaporization rate of a volatile liquid from an open vessel or a liquid spill.

The ratio of the mass transfer coefficients between the compound of interest  $K$  and reference compound  $K_o$  is expressed as follows:

$$\frac{K_i}{K_o} = \left( \frac{D_i}{D_o} \right)^{2/3} \quad \text{Eq. 3-25}$$

The gas-phase diffusion coefficient  $D$  for a compound is estimated from the ratio of molecular weight of the compound of interest and a known compound (normally water) as follows:

$$\frac{D_i}{D_o} = \left( \frac{M_o}{M_i} \right)^{1/2} \quad \text{Eq. 3-26}$$

Combining *Eq. 3-25* and *Eq. 3-26* results in a relationship that can be used to estimate the mass transfer coefficient of a given volatile compound.

$$K_i = K_o \left( \frac{M_o}{M_i} \right)^{1/3} \quad \text{Eq. 3-27}$$

Water is commonly used as a base reference for estimating the mass transfer coefficient for many compounds of interest. The mass transfer coefficient of water at 77 F and 760 mm Hg. is 0.83 cm/s.

### **Illustration 3-19: Evaporation from a vessel with an open top.**

A large open top vertical tank with a 6-ft diameter contains heptane. Estimate the evaporation rate from the tank at 25 C and 1 atm pressure.

The molecular weight of heptane is 100.2. The mass transfer coefficient is estimated using *Eq. 3-24* with the known mass transfer coefficient for water of 0.83 cm/s.

$$K_i = K_o \left( \frac{M_o}{M_i} \right)^{1/3} = 0.83 \frac{\text{cm}}{\text{s}} \left( \frac{18.02}{100.2} \right)^{1/3} = 0.4685 \frac{\text{cm}}{\text{s}} \times \frac{3600 \cdot \text{s} \cdot \text{ft}}{30.48 \cdot \text{hr} \cdot \text{cm}} = 55.33 \frac{\text{ft}}{\text{hr}}$$

$$P_{\text{heptane}}^{\text{sat}} = 45.86 \text{ mmHg.}$$

$$A = \frac{\pi d^2}{4} = \frac{3.14 \cdot 36 \text{ ft}^2}{4} = 28.26 \text{ ft}^2$$

$$E_{n-i} = \frac{M_i K_i A P_i^{\text{sat}}}{RT_L} = \frac{(100.2 \text{ lb/lb-mole})(55.33 \text{ ft/hr})(28.26 \text{ ft}^2)(45.86 \text{ mmHg})}{(998.9 \text{ ft}^3 \text{ atm/lb-mol}^\circ\text{K})(298.15^\circ\text{K})}$$

$$E_{\text{wt-i}} = 24.42 \text{ lb/hr}$$

### **Illustration 3-20: Evaporation losses from a spill.**

Toluene is spilled onto the ground outside of a building. Determine the toluene evaporation rate based on the following data:

The ambient temperature (T) is 25°C or 298.15K. (°K = °C + 273.15)

## VAPOR PRESSURES OF SOLUTIONS

## UNITS CONVERSIONS

For this subsection, the following units conversions are applicable:

$$^{\circ}\text{F} = ^{\circ}\text{C} + 32$$

To convert millimeters of mercury to pounds-force per square inch, multiply by 0.01934.

To convert cubic feet to cubic meters, multiply by 0.02832.  
To convert bars to pounds-force per square inch, multiply by 14.504.  
To convert bars to kilopascals, multiply by  $1 \times 10^5$ .

TABLE 2-11 Partial Pressures of Water over Aqueous Solutions of HCl\*

$\log_{10} \text{pmm} = A - B/T$ , (T in K), which, however, agrees only approximately with the table. The table is more nearly correct.  
Partial pressure of  $\text{H}_2\text{O}$ , mmHg,  $^{\circ}\text{C}$

% HCl	A	B	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	60°	70°	80°	90°	100°	110°
6	8.99156	2282	4.18	6.04	8.45	11.7	15.9	21.8	29.1	39.4	50.6	66.2	86.0	139	220	333	492	715	960
10	8.99864	2295	3.84	5.52	7.70	10.7	14.6	20.0	26.8	35.5	47.0	61.5	80.0	130	204	310	463	677	892
14	8.97075	2300	3.39	4.91	6.95	9.65	13.1	18.0	24.1	31.9	42.1	55.3	72.0	116	185	273	425	625	831
18	8.98014	2323	2.87	4.21	5.92	8.26	11.3	15.4	20.6	27.5	36.4	47.9	62.5	102	162	248	374	550	783
20	8.97877	2334	2.62	3.83	5.40	7.50	10.3	14.1	19.0	25.1	33.3	43.6	57.0	93.5	150	230	345	510	729
22	9.02708	2363	2.33	3.40	4.82	6.75	9.30	12.6	17.1	22.8	30.2	39.8	52.0	85.6	138	211	317	467	670
24	8.96022	2356	2.05	3.04	4.31	6.03	8.30	11.4	15.4	20.4	27.1	35.7	46.7	77.0	124	194	290	426	611
26	9.01511	2390	1.76	2.60	3.71	5.21	7.21	9.95	13.5	18.0	24.0	31.7	41.5	69.0	112	173	261	387	555
28	8.97611	2395	1.50	2.24	3.21	4.54	6.32	8.75	11.8	15.8	21.1	27.9	36.5	60.7	99.0	154	234	349	499
30	9.00117	2422	1.26	1.90	2.73	3.88	5.41	7.52	10.2	13.7	18.4	24.3	32.0	53.5	87.5	136	207	310	444
32	9.03317	2453	1.04	1.57	2.27	3.25	4.55	6.37	8.70	11.7	15.7	21.0	27.7	46.5	76.5	120	184	275	396
34	9.07143	2487	0.85	1.29	1.87	2.70	3.81	5.35	7.32	9.95	13.5	18.1	24.0	40.5	66.5	104	161	243	355
36	9.11815	2526	0.68	1.03	1.50	2.19	3.10	4.41	6.08	8.33	11.4	15.4	20.4	34.8	57.0	90.0	140	212	311
38	9.20783	2579	0.53	0.81	1.20	1.75	2.51	3.60	5.03	6.92	9.52	13.0	17.4	29.6	49.1	77.5	120	182	266
40	9.33923	2647	0.41	0.63	0.94	1.37	2.00	2.88	4.09	5.68	7.85	10.7	14.5	25.0	42.1	67.3	105	158	230
42	9.44953	2709	0.31	0.48	0.72	1.06	1.56	2.30	3.28	4.60	6.45	8.90	12.1	21.2	35.8	57.2	89.2	135	195

\*Uncertainty, ca. 2 percent for solutions of 15 to 30 percent HCl between 0 and 100°; for solutions of > 30 percent HCl the accuracy is ca. 5 percent at the lower temperatures and ca. 15 percent at the higher temperatures. Below 15 percent HCl, the uncertainty is ca. 5 percent at the lower temperatures and higher strengths to ca. 15 to 20 percent at the lower strengths and perhaps 15 to 20 percent at the higher temperatures and lower strengths.  
International Critical Tables, vol. 3, p. 301.

TABLE 2-12 Partial Pressures of HCl over Aqueous Solutions of HCl\*

$\log_{10} \text{pmm} = A - B/T$ , (T in K), which, however, agrees only approximately with the table. The table is more nearly correct. mmHg,  $^{\circ}\text{C}$

% HCl	A	B	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	60°	70°	80°	90°	100°	110°
2	11.8037	4736			0.0000117	0.000023	0.000044	0.000084	0.000151	0.000275	0.00047	0.00083	0.00140	0.00380	0.0100	0.0245	0.058	0.132	0.290
4	11.6400	4471	0.000018	0.000036	0.000069	0.000131	0.00024	0.00044	0.00077	0.00134	0.0023	0.00385	0.0064	0.0165	0.0405	0.095	0.21	0.46	0.93
6	11.2144	4202	0.000066	0.000125	0.000234	0.000425	0.00076	0.00131	0.00225	0.0038	0.0062	0.0102	0.0163	0.040	0.094	0.206	0.44	0.92	1.78
8	11.0406	4042	0.000118	0.000323	0.000583	0.00104	0.00178	0.0031	0.00515	0.0085	0.0136	0.022	0.0344	0.081	0.183	0.39	0.82	1.64	3.10
10	10.9311	3908	0.00042	0.00075	0.00134	0.00232	0.00395	0.0067	0.0111	0.0178	0.0282	0.045	0.069	0.157	0.35	0.73	1.48	2.9	5.4
12	10.7900	3765	0.00099	0.00175	0.00305	0.0052	0.0088	0.0145	0.0234	0.037	0.058	0.091	0.136	0.305	0.66	1.34	2.65	5.1	9.3
14	10.6954	3636	0.0024	0.00415	0.0071	0.0118	0.0196	0.0316	0.050	0.078	0.121	0.185	0.275	0.60	1.25	2.50	4.8	9.0	16.0
16	10.6261	3516	0.0056	0.0095	0.016	0.0265	0.0428	0.0685	0.106	0.163	0.247	0.375	0.55	1.17	2.40	4.66	8.8	16.1	28
18	10.4957	3376	0.0135	0.0225	0.037	0.060	0.095	0.148	0.228	0.345	0.515	0.77	1.11	2.3	4.55	8.6	15.7	28	48
20	10.3833	3245	0.0316	0.052	0.084	0.132	0.205	0.32	0.48	0.72	1.06	1.55	2.21	4.4	8.5	15.6	28.1	49	83
22	10.3172	3125	0.0734	0.119	0.187	0.294	0.45	0.68	1.02	1.50	2.18	3.14	4.42	8.6	16.3	29.3	52	90	146
24	10.2185	2995	0.175	0.277	0.43	0.66	1.00	1.49	2.17	3.14	4.5	6.4	8.9	16.9	31.0	54.5	94	157	253
26	10.1303	2870	0.41	0.64	0.98	1.47	2.17	3.20	4.56	6.50	9.2	12.7	17.5	32.5	58.5	100	169	276	436
28	10.0115	2732	1.0	1.52	2.27	3.36	4.90	7.05	9.90	13.8	19.1	26.4	35.7	64	112	188	309	493	760
30	9.8763	2593	2.4	3.57	5.23	7.60	10.6	15.1	21.0	28.6	39.4	53	71	124	208	340	542	845	
32	9.7523	2457	5.7	8.3	11.8	16.8	23.5	32.5	44.5	60.0	81	107	141	238	390	623	970		
34	9.6061	2316	13.1	18.8	26.4	36.8	50.5	68.5	92	122	161	211	273	450	720				
36	9.5262	2229	29.0	41.0	56.4	78	105.5	142	188	246	322	416	535	860					
38	9.4670	2094	63.0	87.0	117	158	210	277	360	465	598	758	955						
40	9.2156	1939	130	176	233	307	399	515	627	830									
42	8.9925	1800	253	332	430	560	709	900											
44	8.8621	1681	510	655	840														
46		940																	

\*Uncertainty, ca. 2 percent for solutions of 15 to 30 percent HCl between 0 and 100°; for solutions of > 30 percent HCl the accuracy is ca. 5 percent at the lower temperatures and ca. 15 percent at the higher temperatures. Below 15 percent HCl, the uncertainty is ca. 5 percent at the lower temperatures and higher strengths to ca. 15 to 20 percent at the lower strengths and perhaps 15 to 20 percent at the higher temperatures and lower strengths.  
International Critical Tables, vol. 3, p. 301.

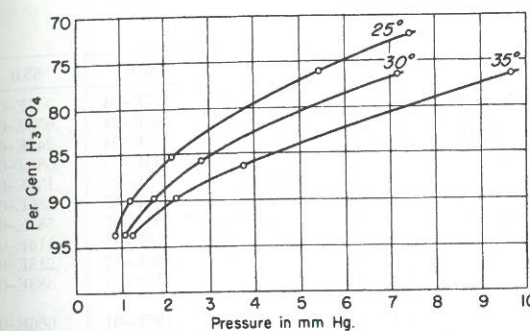


FIG. 2-1 Vapor pressures of  $\text{H}_3\text{PO}_4$  aqueous: partial pressure of  $\text{H}_2\text{O}$  vapor. (Courtesy of Victor Chemical Works, Stauffer Chemical Company; measurements by W. H. Woodstock.)

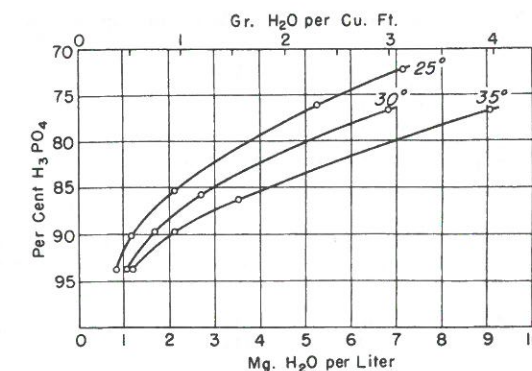


FIG. 2-2 Vapor pressures of  $\text{H}_3\text{PO}_4$  aqueous: weight of  $\text{H}_2\text{O}$  in saturated air. (Courtesy of Victor Chemical Works, Stauffer Chemical Company; measurements by W. H. Woodstock.)

TABLE 2-13 Partial Pressures of  $\text{H}_2\text{O}$  and  $\text{SO}_2$  over Aqueous Solutions of Sulfur Dioxide\*

Partial pressures of  $\text{H}_2\text{O}$  and  $\text{SO}_2$ , mmHg,  $^{\circ}\text{C}$

g $\text{SO}_2$ / 100 g $\text{H}_2\text{O}$	Temperature, $^{\circ}\text{C}$								
	0	10	20	30	40	50	60	90	120
0.01	0.02	0.04	0.07	0.12	0.19	0.29	0.43	1.21	2.82
0.05	0.38	0.66	1.07	1.68	2.53	3.69	5.24	12.9	27.0
0.10	1.15	1.91	3.03	4.62	6.80	9.71	13.5	31.7	63.9
0.15	2.10	3.44	5.37	8.07	11.7	16.5	22.7	52.2	104
0.20	3.17	5.13	7.93	11.8	17.0	23.8	32.6	73.7	145
0.25	4.34	6.93	10.6	15.7	22.5	31.4	42.8	95.8	186
0.30	5.57	8.84	13.5	19.8	28.2	39.2	53.3	118	229
0.40	8.17	12.8	19.4	28.3	40.1	55.3	74.7	164	316
0.50	10.9	17.0	25.6	37.1	52.3	72.0	96.8	211	404
1.00	25.8	39.5	58.4	83.7	117	159	212	454	856
2.00	58.6	88.5	129	183	253	342	453	955	
3.00	93.2	139	202	285	393	530	700		
4.00	129	192	277	389	535	720			
5.00	165	245	353	496	679				
6.00	202	299	430	602	824				
8.00	275	407	585	818					
10.00	351	517	741						
15.00	542	796							
20.00	735								

\*Extracted with permission from J. Chem Eng. Data 8, 1963: 333-336. Copyright 1963 American Chemical Society.



## 2-88 PHYSICAL AND CHEMICAL DATA

TABLE 2-18 Partial Pressures of HNO<sub>3</sub> and H<sub>2</sub>O over Aqueous Solutions of HNO<sub>3</sub>\*

°C	mmHg Percentages are weight % HNO <sub>3</sub> in solution.											
	20%		25%		30%		35%		40%		45%	
	HNO <sub>3</sub>	H <sub>2</sub> O	HNO <sub>3</sub>	H <sub>2</sub> O	HNO <sub>3</sub>	H <sub>2</sub> O	HNO <sub>3</sub>	H <sub>2</sub> O	HNO <sub>3</sub>	H <sub>2</sub> O	HNO <sub>3</sub>	H <sub>2</sub> O
0		4.1		3.8		3.6		3.3		3.0		2.6
5		5.7		5.4		5.0		4.6		4.2		3.6
10		8.0		7.6		7.1		6.5		5.8		5.0
15		10.9		10.3		9.7		8.9		8.0	0.10	6.9
20		15.2		14.2		13.2		12.0		10.8	.15	9.4
25		20.6		19.2		17.8		16.2	0.12	14.6	.23	12.7
30		27.6		25.7		23.8	0.09	21.7	.17	19.5	.33	16.9
35		36.5		33.8		31.1	.13	28.3	.25	25.5	.48	22.3
40		47.5		44	0.11	41	.20	37.7	.36	33.5	.68	29.3
45		62	0.09	57.5	.17	53	.28	48	.52	43	.96	38.0
50		80	.13	75	.25	69	.42	63	.75	56	1.35	49.5
55	0.09	100	.18	94	.35	87	.59	79	1.04	71	1.83	62.5
60	.13	128	.28	121	.51	113	.85	102	1.48	90	2.54	80
65	.19	162	.40	151	.71	140	1.18	127	2.05	114	3.47	100
70	.27	200	.54	187	1.00	174	1.63	159	2.80	143	4.65	126
75	.38	250	.77	234	1.38	217	2.26	198	3.80	178	6.20	158
80	.53	307	1.05	287	1.87	267	3.07	243	5.10	218	8.15	195
85	.74	378	1.44	352	2.53	325	4.15	297	6.83	268	10.7	240
90	1.01	458	1.95	426	3.38	393	5.50	359	9.0	325	13.7	292
95	1.37	555	2.62	517	4.53	478	7.32	436	11.7	394	17.8	355
100	1.87	675	3.50	628	6.05	580	9.7	530	15.5	480	23.0	430
105	2.50	800	4.65	745	7.90	690	12.7	631	20.0	573	29.2	520
110							16.5	755	25.7	688	37.0	625
115									32.5	810	46	740
120												84

°C	55%		60%		65%		70%		80%		90%	
	HNO <sub>3</sub>	H <sub>2</sub> O	HNO <sub>3</sub>	H <sub>2</sub> O	HNO <sub>3</sub>	H <sub>2</sub> O	HNO <sub>3</sub>	H <sub>2</sub> O	HNO <sub>3</sub>	H <sub>2</sub> O	HNO <sub>3</sub>	H <sub>2</sub> O
0		1.8	0.19	1.5	0.41	1.3	0.79	1.1	2		5.5	
5	0.14	2.5	.28	2.1	.60	1.8	1.12	1.6	3		8	
10	.21	3.5	.41	3.0	.86	2.6	1.58	2.2	4	1.2	11	
15	.31	4.9	.59	4.1	1.21	3.5	2.18	3.0	6	1.7	15	
20	.45	6.7	.84	5.6	1.68	4.9	3.00	4.1	8	2.4	20	
25	.66	9.1	1.21	7.7	2.32	6.6	4.10	5.5	10.5	3.2	27	1
30	.93	12.2	1.66	10.3	3.17	8.8	5.50	7.4	14	4	36	1.3
35	1.30	16.1	2.28	13.6	4.26	11.6	7.30	9.8	18.5	5.5	47	1.8
40	1.82	21.3	3.10	18.1	5.70	15.5	9.65	12.8	24.5	7	62	2.4
45	2.50	28.0	4.20	23.7	7.55	20.0	12.6	16.7	32	9.5	80	3
50	3.41	36.3	5.68	31	10.0	26.0	16.5	21.8	41	12	103	4
55	4.54	46	7.45	39	12.8	33.0	21.0	27.3	52	15	127	5
60	6.15	60	9.9	51	16.8	43.0	27.1	35.3	67	20	157	6.5
65	8.18	76	13.0	64	21.7	54.5	34.5	44.5	85	25	192	8
70	10.7	95	16.8	81	27.5	68	43.3	56	106	31	232	10
75	13.9	120	21.8	102	35.0	86	54.5	70	130	38	282	13
80	18.0	148	27.5	126	43.5	106	67.5	86	158	48	338	16
85	23.0	182	34.8	156	54.5	131	83	107	192	60	405	20
90	29.4	223	43.7	192	67.5	160	103	130	230	73	480	24
95	37.3	272	55.0	233	83.5	195	125	158	278	89	570	29
100	47	331	69.5	285	103	238	152	192	330	108	675	35
105	58.5	400	84.5	345	124	288	183	231	392	129	790	42
110	73	485	103	417	152	345	221	278	465	155		
115	90	575	126	495	181	410	262	330	545	185		
120	110	685	156	590	218	490	312	393	640	219		
125			187	700	260	580	372	469				

\*International Critical Tables, vol. 3, pp. 304-305.

## 1.5 Liquefied Petroleum Gas Combustion

### 1.5.1 General<sup>1</sup>

Liquefied petroleum gas (LPG or LP-gas) consists of propane, propylene, butane, and butylenes; the product used for domestic heating is composed primarily of propane. This gas, obtained mostly from gas wells (but also, to a lesser extent, as a refinery by-product) is stored as a liquid under moderate pressures. There are three grades of LPG available as heating fuels: commercial-grade propane, engine fuel-grade propane (also known as HD-5 propane), and commercial-grade butane. In addition, there are high-purity grades of LPG available for laboratory work and for use as aerosol propellants. Specifications for the various LPG grades are available from the American Society for Testing and Materials and the Gas Processors Association. A typical heating value for commercial-grade propane and HD-5 propane is 90,500 British thermal units per gallon (Btu/gal), after vaporization; for commercial-grade butane, the value is 97,400 Btu/gal.

The largest market for LPG is the domestic/commercial market, followed by the chemical industry (where it is used as a petrochemical feedstock) and the agriculture industry. Propane is also used as an engine fuel as an alternative to gasoline and as a standby fuel for facilities that have interruptible natural gas service contracts.

### 1.5.2 Firing Practices<sup>2</sup>

The combustion processes that use LPG are very similar to those that use natural gas. Use of LPG in commercial and industrial applications may require a vaporizer to provide the burner with the proper mix of air and fuel. The burner itself will usually have different fuel injector tips as well as different fuel-to-air ratio controller settings than a natural gas burner since the LPG stoichiometric requirements are different than natural gas requirements. LPG is fired as a primary and backup fuel in small commercial and industrial boilers and space heating equipment and can be used to generate heat and process steam for industrial facilities and in most domestic appliances that typically use natural gas.

### 1.5.3 Emissions<sup>1,3-5</sup>

#### 1.5.3.1 Criteria Pollutants -

LPG is considered a "clean" fuel because it does not produce visible emissions. However, gaseous pollutants such as nitrogen oxides ( $\text{NO}_x$ ), carbon monoxide (CO), and organic compounds are produced as are small amounts of sulfur dioxide ( $\text{SO}_2$ ) and particulate matter (PM). The most significant factors affecting  $\text{NO}_x$ , CO, and organic emissions are burner design, burner adjustment, boiler operating parameters, and flue gas venting. Improper design, blocking and clogging of the flue vent, and insufficient combustion air result in improper combustion and the emission of aldehydes, CO, hydrocarbons, and other organics.  $\text{NO}_x$  emissions are a function of a number of variables, including temperature, excess air, fuel and air mixing, and residence time in the combustion zone. The amount of  $\text{SO}_2$  emitted is directly proportional to the amount of sulfur in the fuel. PM emissions are very low and result from soot, aerosols formed by condensable emitted species, or boiler scale dislodged during combustion. Emission factors for LPG combustion are presented in Table 1.5-1.

Table 1.5-1 presents emission factors on a volume basis ( $\text{lb}/10^3\text{gal}$ ). To convert to an energy basis ( $\text{lb}/\text{MMBtu}$ ), divide by a heating value of  $91.5 \text{ MMBtu}/10^3\text{gal}$  for propane and  $102 \text{ MMBtu}/10^3\text{gal}$  for butane.

#### 1.5.3.2 Greenhouse Gases<sup>6-11</sup> -

Carbon dioxide ( $\text{CO}_2$ ), methane ( $\text{CH}_4$ ), and nitrous oxide ( $\text{N}_2\text{O}$ ) emissions are all produced during LPG combustion. Nearly all of the fuel carbon (99.5 percent) in LPG is converted to  $\text{CO}_2$  during the combustion process. This conversion is relatively independent of firing configuration. Although the formation of CO acts to reduce  $\text{CO}_2$  emissions, the amount of CO produced is insignificant compared to the amount of  $\text{CO}_2$  produced. The majority of the 0.5 percent of fuel carbon not converted to  $\text{CO}_2$  is due to incomplete combustion in the fuel stream.

Formation of  $N_2O$  during the combustion process is governed by a complex series of reactions and its formation is dependent upon many factors. Formation of  $N_2O$  is minimized when combustion temperatures are kept high (above 1475°F) and excess air is kept to a minimum (less than 1 percent).

Methane emissions are highest during periods of low-temperature combustion or incomplete combustion, such as the start-up or shut-down cycle for boilers. Typically, conditions that favor formation of  $N_2O$  also favor emissions of  $CH_4$ .

#### 1.5.4 Controls

The only controls developed for LPG combustion are to reduce  $NO_x$  emissions.  $NO_x$  controls have been developed for firetube and watertube boilers firing propane or butane. Vendors are now guaranteeing retrofit systems to levels as low as 30 to 40 ppm (based on 3 percent oxygen). These systems use a combination of low- $NO_x$  burners and flue gas recirculation (FGR). Some burner vendors use water or steam injection into the flame zone for  $NO_x$  reduction. This is a trimming technique which may be necessary during backup fuel periods because LPG typically has a higher  $NO_x$ -forming potential than natural gas; conventional natural gas emission control systems may not be sufficient to reduce LPG emissions to mandated levels. Also, LPG burners are more prone to sooting under the modified combustion conditions required for low  $NO_x$  emissions. The extent of allowable combustion modifications for LPG may be more limited than for natural gas.

One  $NO_x$  control system that has been demonstrated on small commercial boilers is FGR.  $NO_x$  emissions from propane combustion can be reduced by as much as 50 percent by recirculating about 16 percent of the flue gas.  $NO_x$  emission reductions of over 60 percent have been achieved with FGR and low- $NO_x$  burners used in combination.

#### 1.5.5 Updates Since the Fifth Edition

The Fifth Edition was released in January 1995. Revisions to this section since that date are summarized below. For further detail, consult the memoranda describing each supplement or the background report for this section.

##### Supplement A, February 1996

No changes.

##### Supplement B, October 1996

- Text was added concerning firing practices.
- The  $CO_2$  emission factor was updated.
- Emission factors were added for  $N_2O$  and  $CH_4$ .

##### July 2008

The PM filterable,  $NO_x$ , CO and TOC emissions factors were updated and the PM condensable and PM total emissions factors were added using the revised PM,  $NO_x$ , CO and TOC emissions factors for natural gas combustion for small boilers (see July 1998 revisions to section 1.4, Natural Gas Combustion).

Table 1.5-1. EMISSION FACTORS FOR LPG COMBUSTION<sup>a</sup>

## EMISSION FACTOR RATING: E

Pollutant	Butane Emission Factor (lb/10 <sup>3</sup> gal)		Propane Emission Factor (lb/10 <sup>3</sup> gal)	
	Industrial Boilers <sup>b</sup> (SCC 1-02-010-01)	Commercial Boilers <sup>c</sup> (SCC 1-03-010-01)	Industrial Boilers <sup>b</sup> (SCC 1-02-010-02)	Commercial Boilers <sup>c</sup> (SCC 1-03-010-02)
PM, Filterable <sup>d</sup>	0.2	0.2	0.2	0.2
PM, Condensable	0.6	0.6	0.5	0.5
PM, Total	0.8	0.8	0.7	0.7
SO <sub>2</sub> <sup>e</sup>	0.09S	0.09S	0.10S	0.10S
NO <sub>x</sub> <sup>f</sup>	15	15	13	13
N <sub>2</sub> O <sup>g</sup>	0.9	0.9	0.9	0.9
CO <sub>2</sub> <sup>h,j</sup>	14,300	14,300	12,500	12,500
CO	8.4	8.4	7.5	7.5
TOC	1.1	1.1	1.0	1.0
CH <sub>4</sub> <sup>k</sup>	0.2	0.2	0.2	0.2

<sup>a</sup> Assumes PM, CO, and TOC emissions are the same, on a heat input basis, as for natural gas combustion. Use heat contents of 91.5 x 10<sup>6</sup> Btu/10<sup>3</sup> gallon for propane, 102 x 10<sup>6</sup> Btu/10<sup>3</sup> gallon for butane, 1020 x 10<sup>6</sup> Btu/10<sup>6</sup> scf for methane when calculating an equivalent heat input basis. For example, the equation for converting from methane's emissions factors to propane's emissions factors is as follows: lb pollutant/10<sup>3</sup> gallons of propane = (lb pollutant / 10<sup>6</sup> ft<sup>3</sup> methane) \* (91.5 x 10<sup>6</sup> Btu/10<sup>3</sup> gallons of propane) / (1020 x 10<sup>6</sup> Btu/10<sup>6</sup> scf of methane). The NO<sub>x</sub> emission factors have been multiplied by a correction factor of 1.5, which is the approximate ratio of propane/butane NO<sub>x</sub> emissions to natural gas NO<sub>x</sub> emissions. To convert from lb/10<sup>3</sup> gal to kg/10<sup>3</sup> L, multiply by 0.12. SCC = Source Classification Code.

<sup>b</sup> Heat input capacities generally between 10 and 100 million Btu/hour.

<sup>c</sup> Heat input capacities generally between 0.3 and 10 million Btu/hour.

<sup>d</sup> Filterable particulate matter (PM) is that PM collected on or prior to the filter of an EPA Method 5 (or equivalent) sampling train. For natural gas, a fuel with similar combustion characteristics, all PM is less than 10 μm in aerodynamic equivalent diameter (PM-10).

<sup>e</sup> S equals the sulfur content expressed in gr/100 ft<sup>3</sup> gas vapor. For example, if the butane sulfur content is 0.18 gr/100 ft<sup>3</sup>, the emission factor would be (0.09 x 0.18) = 0.016 lb of SO<sub>2</sub>/10<sup>3</sup> gal butane burned.

<sup>f</sup> Expressed as NO<sub>2</sub>.

<sup>g</sup> Reference 12.

<sup>h</sup> Assuming 99.5% conversion of fuel carbon to CO<sub>2</sub>.

<sup>j</sup> EMISSION FACTOR RATING = C.

<sup>k</sup> Reference 13.

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# BANANZA

## 100% Thermal Efficient, Direct-Fired, Make-up Air Systems

**For Ventilation, Heating and Curing  
in Paint Booths and Finishing Areas**



### SPRAY-CURE™ B-Series

- Helps reduce cycle time and increase productivity with advanced SPRAY-CURE™ technology.
- Can facilitate improved operation and paint job quality through pressurization.
- Can meet shop space demands with array of configurations.
- Helps reduce energy costs due to 100% thermal efficiency.
- Long lasting unit provided by heavy-duty, corrosion-resistant, galvanized steel construction.
- Easy maintenance of blower, motor, drives and burners with large access panels.
- Heaters are listed to ANSI Z83.25/CSA 3.19 direct gas-fired process air heaters.

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# BANANZA® B-Series with SPRAY-CURE™

Designed for the unique needs of the finishing market, BANANZA® B-Series air handlers with SPRAY-CURE™ technology help maintain a pressurized condition in the finishing facility or paint booth. Introducing a controlled amount of fresh, tempered air, can keep dirt and debris out, helping reduce finishing time while improving productivity, operation and finishing quality.

The air handlers are sized and designed according to the exhaust rate requirements of the paint booth or finishing facility. SPRAY-CURE™ units help enhance the performance of the exhaust and filtering system. During the curing cycle, super-heated air is circulated to speed cure time and improve efficiency of the finishing process.

Air handlers utilizing recirculation, can deliver high temperatures in cure mode and aid in reduced fuel usage. Additional energy savings can be realized by the unit's 100% thermal efficiency. Proper booth pressurization in the finishing facility or paint booth, helps minimize heat loss.

Model		B-650	B-1000	B-2000	B-3000
CFM		5,000 - 10,000	11,000 - 14,000	16,000 - 25,000	27,500 - 40,000
Output [MBH]*	NG	594 - 1,188	1,306 - 1,663	1,900 - 2,970	3,267 - 4,752
	LPG	486 - 972	1,069 - 1,360	1,553 - 2,430	2,673 - 3,888

\* 1MBH = 1,000 Btu/h. Output range indicated at maximum temperature rise, the maximum rise for the B-650 to B-3000 is NG/LPG=110/90 Degree F at 100% outside air.

## 100% Thermal Efficient in Curing of Paint, Coatings and Finishes for:

- Automotive Paint Booths
- Industrial Components and Parts Finishing
- RV, Truck, Boat/Marine Paint Booths and Buildings
- Cabinets and Woodwork Finishing and Varnishing
- Aircraft Parts Finishing and Paint Hangars
- Furniture Finishing and Varnishing







# SPRAY-CURE™ Remote Panels to Meet a Varie

A variety of pre-engineered controls help customize the BANANZA® unit's operation for a specific process.



Remote Panel	Basic II (Cure)		Basic II (Spray)	Digital Dual #
Used for Curing Paint	Yes		No	Yes
Used for Spraying Paint	No		Yes	Yes
Discharge Air Temperature ° F (° C)	120 - 170 (48.9 - 76.7)		55 - 90 (12.8 - 32.2)	60 - 90 (15.6 - 32.2) 80 -180 (26.7 - 82.2)
	Single analog temperature selection dial.			Two temperature selection digital display.
Fan ON/OFF Switch	Yes		Yes	Yes
Burner ON/OFF Switch	Yes		Yes	Yes
Light ON/OFF Switch	Yes		Yes	No
SPRAY-CURE™ Mode Selector Switch	No		No	Yes
Indicator Lights	Yes		Yes	Yes
Other Controls	No		No	Adjustable speed controls fan in spray and cure
Burner Flame	Modulated by discharge temp			
Nema 1 Enclosure	Yes		Yes	Yes
FAN ON/BURNER OFF Mode	Blower can operate without burn			
FAN ON/BURNER ON Mode	Air handler operates continuously, supplyin			
FAN/BURNER ON - Spray Mode	No		Yes	Yes
FAN/BURNER ON - Cure Mode	Yes		No	Yes

# ty of Applications

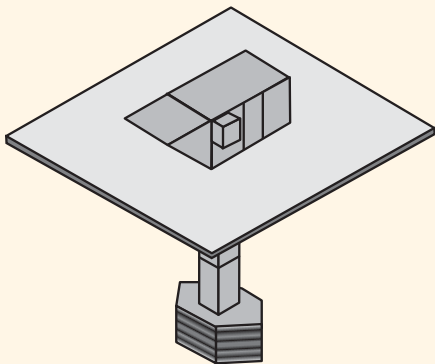
			
<b>#1</b>	<b>Dual #2</b>	<b>Digital 60-160</b>	<b>Deluxe Digital</b>
	Yes	Yes	Yes
	Yes	Yes	Yes
) / (2)	55 - 90 (12.8 - 32.2) / 120 - 170 (48.9 - 76.7)	60 - 160 (15.6 - 71.1)	60 - 90 (15.6 - 32.2) / 80 - 180 (26.7 - 82.2)
ains constant as selected on temperature selection dial.			
n dials with	Two analog temperature selection dials.	Single temperature selection dial with digital display.	Two temperature selection dials with digital display.
	Yes	Yes	Yes
	Yes	Yes	Yes
	Yes	Yes	Yes
	Yes	No	Yes
	Yes	Yes	Yes
for exhaust mode.	Adjustable purge and cure timers.	Adjustable speed control for exhaust fan and booth pressure gauge. Optional: burner lockout indicator light, remote reset push button and check filter indicator light.	Adjustable speed controls for exhaust fan in spray and cure mode and booth pressure gauge. Adjustable timers for purge, cure and cool down. Optional: burner lockout indicator light, remote reset push button and check filter indicator light.
emperature control, governed by remote temperature selector.			
	Yes	Yes	Yes
er. Air handler operates continuously, supplying make-up air.			
g heated make-up air and maintaining constant discharge temperature.			
	Yes	Yes	Yes
	Yes	Yes	Yes



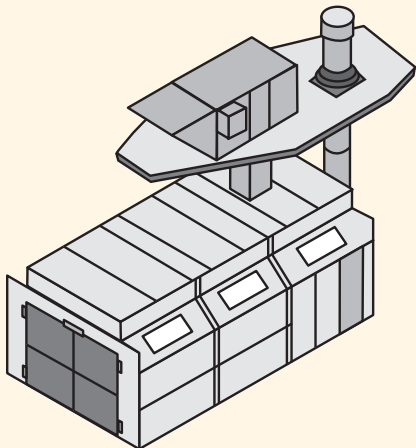
# Installation Options

BANANZA® B-Series air handlers with SPRAY-CURE™ technology are available in flexible configurations, helping allow for mating to various finishing facilities or paint booths. Units can be mounted indoors or outdoors (building rooftop or side wall locations) and can be used with down draft, semi-down draft and cross draft spray booths. These units can be ideal for retrofit and replacement of old or inefficient units. Paint prep stations can also utilize direct-fired make-up air.

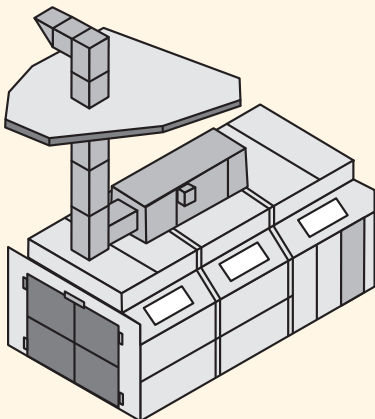
Roof Mounted, Horizontal, Bottom Discharge



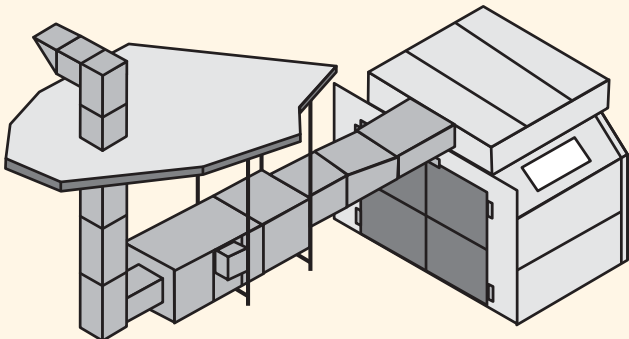
Roof Mounted, Horizontal, Bottom Discharge



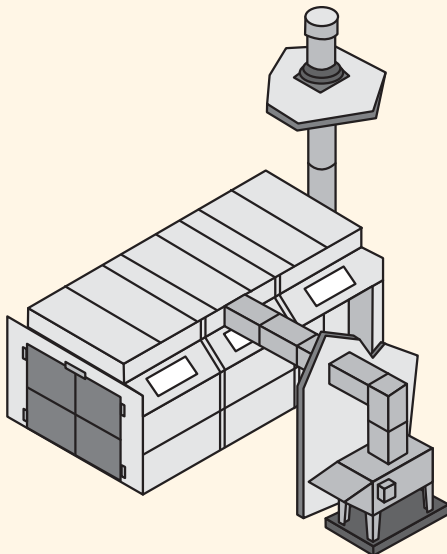
Booth Mounted, Horizontal, Bottom Discharge



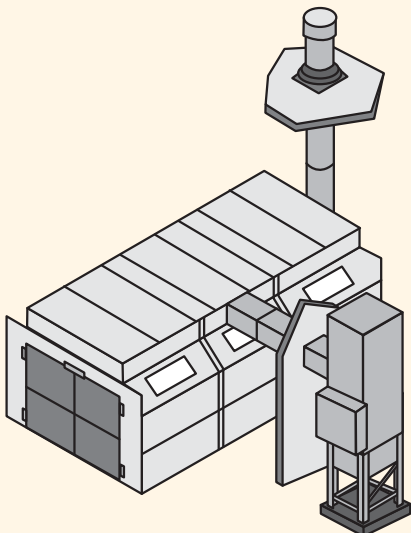
Ceiling Suspended, Horizontal, End Discharge



Pad Mounted, Horizontal, Top Discharge



Pad Mounted, Upright, Side Discharge



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# Wire Combustion Solutions

Issue 5





# Introduction

## Improving on a 80+ Year Tradition of Excellence...

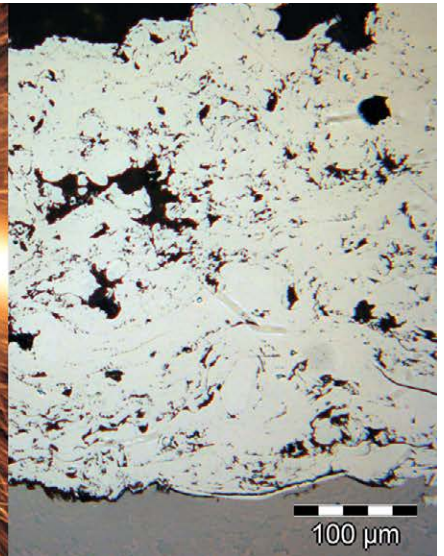
Optimum materials...



Innovative technology...



Perfect coatings...



It's the performance and value package you've been looking for!

### **Oerlikon Metco's Wire Combustion Thermal Spray systems set the industry standard for heavy-duty performance**

Out in the field or in your facility, wire combustion spray is the time-tested method for applying anti-corrosion coatings and performing dimensional surface restorations. When it comes to devising innovative wire combustion thermal spray solutions that enhance productivity and profitability, Oerlikon Metco has set the industry standard. We introduced the world to wire combustion spray coating technology more than half a century ago... And we've been the global leader ever since.

The results are self-evident: Oerlikon Metco Wire Combustion Systems are more economical to use, easier and safer to operate, and deliver precision control superior to anything else on the market.



In the steel industry, combustion wire spray enhances productivity, extends component life and reduces operating costs.



# Applications

## Perfecting the Process to Suit the Application



The oil and gas industry utilize Wire Combustion Spray for corrosion protection, including long-lasting prevention of CUI (Corrosion Under Insulation).

When your engineering challenges require a metal coating to enhance the properties of a given surface, Oerlikon Metco's Wire Combustion Spray Systems are the ideal solution. Utilized extensively throughout the maritime, paper/pulp/printing, manufacturing, steel, aerospace, automotive, and railroad industries, these systems increase both the efficiency and lifetime of numerous parts and components.

The process involves:

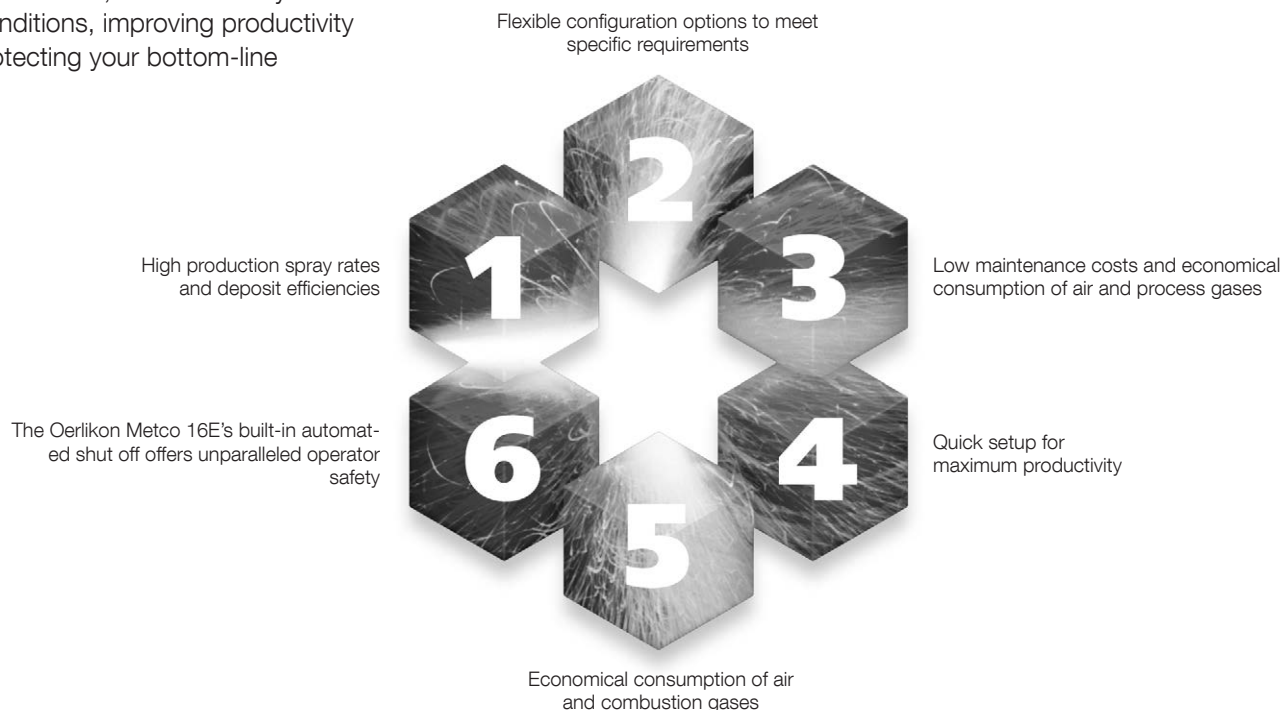
- Drawing a metal alloy wire through the combustion spray gun via a set of drive rolls that are powered by an air turbine or an electric motor
- At the gun nozzle, fuel gas mixes with oxygen to create an intense flame, which is then shaped at the gun's air cap by compressed air
- The metal wire is atomized, and the molten droplets are propelled at high velocity onto a surface specially prepared for wire combustion spraying through degreasing, media blasting, or by simply masking off a specific area
- The spray layers solidify to form a tough thermal coating that bonds with the chosen surface, endowing it with one or more performance-enhancing characteristics

Surface property	Typical applications
Corrosion protection	Corrosion Under Insulation (CUI), bridges, ships, large steel structures, cell towers, galvanized tubing (Tube Mills)
Wear protection	Rotating heavy equipment, piston rings, synchronizing rings
Surface restoration	Hydraulic rods and plungers, worn, or mismatched/ mis-machined parts
Electrical/thermal conductivity	EMI shielding
Decorative surfaces	Surface restoration, art, cosmetic treatments
Coating of internal surfaces (with optional gun extension)	Bearing journals, bell housings, transmission cases, motor blocks

# Profitability

## Increasing Productivity and Profitability Six Ways

Our Wire Combustion Spray Systems deliver the highest quality thermal spray coatings available, under a variety of diverse conditions, improving productivity while protecting your bottom-line profits.



Flexibility, economy, and superior deposition rates make Oerlikon Metco's Wire Combustion Spray the thermal spray system of choice in the maritime industry.



# Key Features

## Key Features That Deliver Added Value



Wire combustion spraying on the inside of chemical and petroleum storage tanks delivers superior, yet cost-effective corrosion resistance.

- Throughout our systems, precision flow control valves monitor actual flow rates of air, oxygen and fuel to the gun nozzle
- Precision flow rate metering, accurate within  $\pm 5\%$  at any flow rate, is made possible by our unique Oxygen Fuel Flowmeter. It ensures peak efficiency with the broadest range of wire spray coatings and operating conditions
- In the event of the slightest change in air line pressure to the gun, the Air Flowmeter provides instantaneous feedback to the system operator
- Spray rates can be easily adjusted, while in use, to meet unique parameters of specialized applications
- The Metco 4AC Air Cleaner can support six combustion spray guns simultaneously with clean, dry air
- Guns can accommodate a variety of wires and wire diameters with easy to change optional hardware
- The gun's universal gas head and burner system accommodates a variety of fuels, including acetylene, hydrogen, propane, MAPP, natural gas and propylene. A simple change to the gun's hardware (nozzle and/or siphon plug) is necessary when switching fuel sources
- The Metco 16E Wire Combustion Gun has a patented torque governor combined with a time-proven, controlled-power governor to assure the power you need is available when you need it
- Our Metco 16E Gun comes equipped with a patented safety handle, preventing injuries in the event the gun is accidentally dropped
- The Metco 5K Wire Combustion Gun is driven by a powerful constant-speed motor that provides precise control of wire speed and is ideally suited for automated production spraying

# Key Elements

## Building Blocks of a Successful Combustion Wire Spray Solution

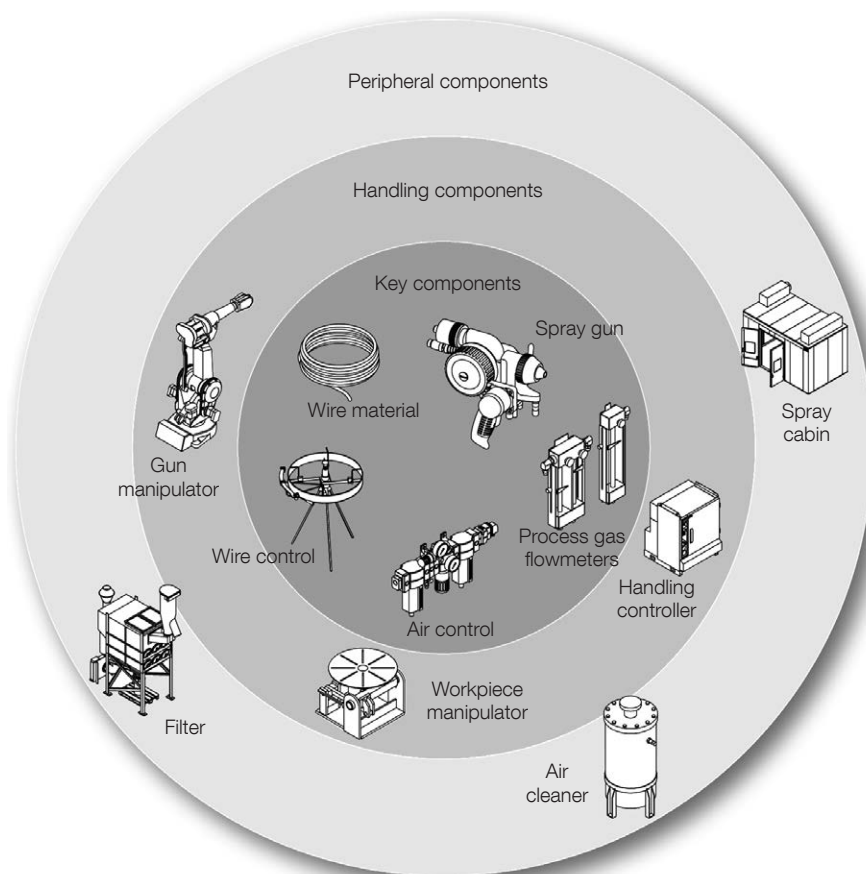


Structures such as bridges, towers, and tunnels receive vital protection from the elements through state-of-the-art wire combustion spraying.

**Key components:** Key elements are required for all combustion wire spray systems. These include the wire coating material to be applied, a wire control device to deliver the coating material to the spray gun, the combustion wire spray gun that will heat the coating material and propel it to the workpiece, and the means to accurately control the pressure and flow of oxygen, fuel gas and air required for combustion and for the air cap.

**Handling equipment:** While many combustion wire coatings are applied using simple manual systems, gun and workpiece handling equipment precisely controls the movement of the spray gun and workpiece, and the position of the gun relative to the workpiece, thereby improving coating repeatability.

**Peripheral equipment:** In-shop spray installations require a soundproof cabin and an air filtration and exhaust system protect both personnel and the environment. To ensure the highest possible coating quality, clean, dry, oil-free air is required.



# Materials

## Every Successful Application Starts with the Right Material Choice

We offer a diverse portfolio of materials for the combustion wire spray process, each capable of achieving one or more surface functions. To further accommodate specific customer requirements, some of our wire materials come in several wire diameters. Many of our corrosion wires have multiple packaging options, such as coils or high volume drums.

Why should you source your combustion wires from Oerlikon Metco? The reasons are notable:

- Our diverse portfolio of products: we can help you choose and supply the material you need.
- Our quality and quality systems are certified to ISO 9001, ISO 14001, Nadcap, and by many of our major customers, as your assurance of the best possible material quality available.
- Our tightly controlled internal specifications means the materials we supply to you are of the highest reliability with excellent lot-to-lot consistency.
- Our in-house expertise, combined with our long, history of successful electric arc spray solutions.
- Our worldwide network of sales offices and hand-picked distributors, backed by our state-of-the-art logistics, means we can deliver, wherever your location and as fast as possible.
- Secure sources of supply and strong, long-standing supplier relationships ensure material availability.

Product	Base	Application														
		Protection														
		Corrosion/Galvanic Protection	Erosion/Wear/Cavitation	Oxidation	Bio-Fouling	Bond Coat	Dimensional Restoration/Repair	Clearance Control	Chemically Strippable	Decorative/Cosmetic/Marking	Optical/Reflective	Electrical/Thermal Conductance	RFI/EMI Shielding	Gripper/Anti-Skid	Low Friction	Solderable
Metco Aluminum	Al	●		●			●		●	●		●	●			●
Metco SF Aluminum	Al						●				●					
Metco SF-NS Aluminum	Al						●				●					
Metco Copper	Cu	●			●		●		●	●		●				●
Sprabronze AA	Cu	●					●			●					●	
Sprabronze™	Cu	●					●			●					●	
Metcoloy 1	Fe		●				●							●		
Metcoloy 2	Fe		●				●							●		
Metcoloy 4	Fe	●					●									
Metcoloy 5	Fe	●	●				●									
Sprasteel 80	Fe		●				●									
Sprasteel 100	Fe						●									
Metco Nickel	Ni	●		●			●							●		
Metco 405-1	Ni			●		●										
Metco 405NS	Ni			●		●										
Metco NiCu (Monel)	Ni	●					●									
Metcoloy 33	Ni		●				●							◆		
Metco Silver	Ag											●				●
Metco Silverloy	Ag							●				●				●
Metco Tin	Sn	●										●				●
Sprababbitt A	Sn														●	
Metco Zinc	Zn	●										●	●			●
Metco ZnAl	Zn	●										●	●			●



## Ensure the Success of Your Application with the Right System

The diagram illustrates the setup of a rocket engine test cell. It includes the following components and their connections:

- ①** A test cell structure with a central vertical axis and a horizontal ring.
- ②** A rocket engine mounted on a test stand.
- ③** A control panel with multiple gauges and switches.
- ④** A control panel with a single gauge and switch.
- ⑤** Two gas cylinders: one green (Oxygen) and one black (Fuel).
- ⑥** A large cylindrical component, likely a combustion chamber or nozzle.
- ⑦** A complex assembly of valves and gauges.

The connections are color-coded as follows:

- Wire:** Grey lines.
- Air:** Blue lines.
- Oxygen:** Green lines.
- Fuel:** Red lines.

- 1. Metco 2W Wire Control Unit:** Essential for fast spray rates, this unit controls tension and straightens the wire as it uncoils, reducing wear on the gears, nozzle and wire guides.
- 2. Metco 16E Combustion Wire Gun:** A precision tool capable of applying coatings to a variety of surfaces. Optional, interchangeable hardware accommodates specific job demands. Equipped with safety handle.

**4. Metco 3AF Air Flowmeter:** This single-meter unit controls the flow of atomizing air and immediately indicates any air supply restrictions.

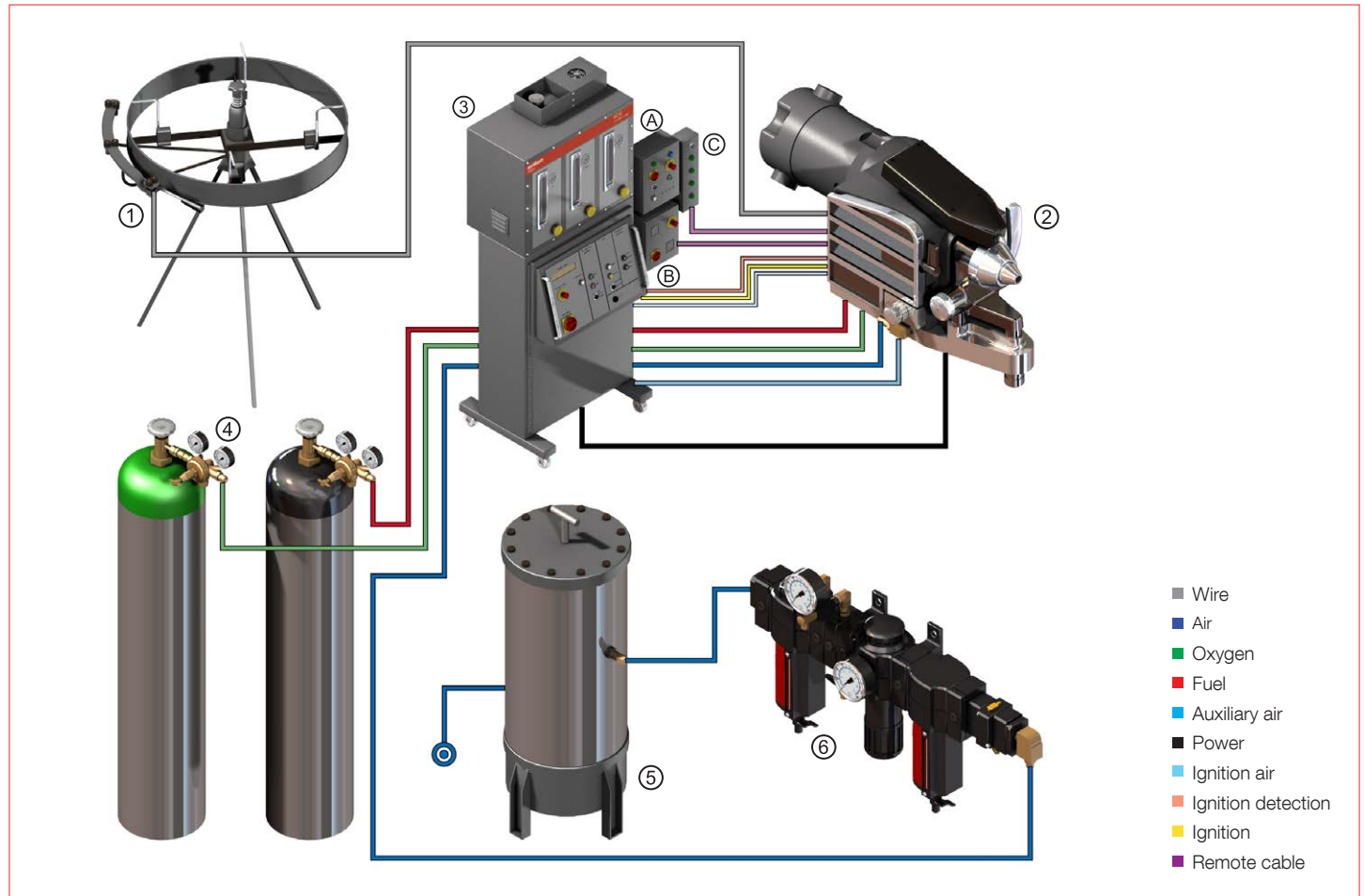
**6. Metco 4AC Air Cleaner:** Four-stage design provides optimal air purification and drying, with flow capacity to support six guns.

**7. Metco 6A Air Control Unit:**  
With two filters and a large quarter turn valve cut-off, the 6A permits precise and rapid adjustment of air pressure to the 3AF Air Flowmeter.

# Spray Systems

Ensure the Success of Your Application with the Right System

## Typical semi-automatic Combustion Wire Spray system



### 1. Metco 2W Wire Control Unit:

Essential for fast spray rates, this unit controls tension and straightens the wire as it uncoils, reducing wear on the gears, nozzle and wire guides.

### 2. Metco 5K/Metco 5KE (CE)

**Combustion Wire Gun:** Ideal for short spray runs as well as complex, high-volume spray applications, the 5K/5KE delivers optimum efficiency for denser, highly uniform, longer-lasting thermal spray coatings.

### 3. Metco 6C/Metco 6CEW (CE)

#### Wire Combustion Control Unit:

With ease of use, this multi-gas compatible unit delivers superior coating quality, reduces operating costs and increases operational safety.

- A. Metco 5KCE-A Wire Control Unit (CE only)
- B. Metco 5KCE-A Remote Control (CE only)
- C. Optional Remote Pendant (non-CE)

### 4. Oxygen and Fuel Gas Regulators:

With twin gauges to monitor cylinder and line pressure, and easy-to-adjust pressure handle. Supplied to local requirements.

### 5. Metco 4AC Air Cleaner:

Four-stage design provides optimal air purification and drying, with flow capacity to support six guns.

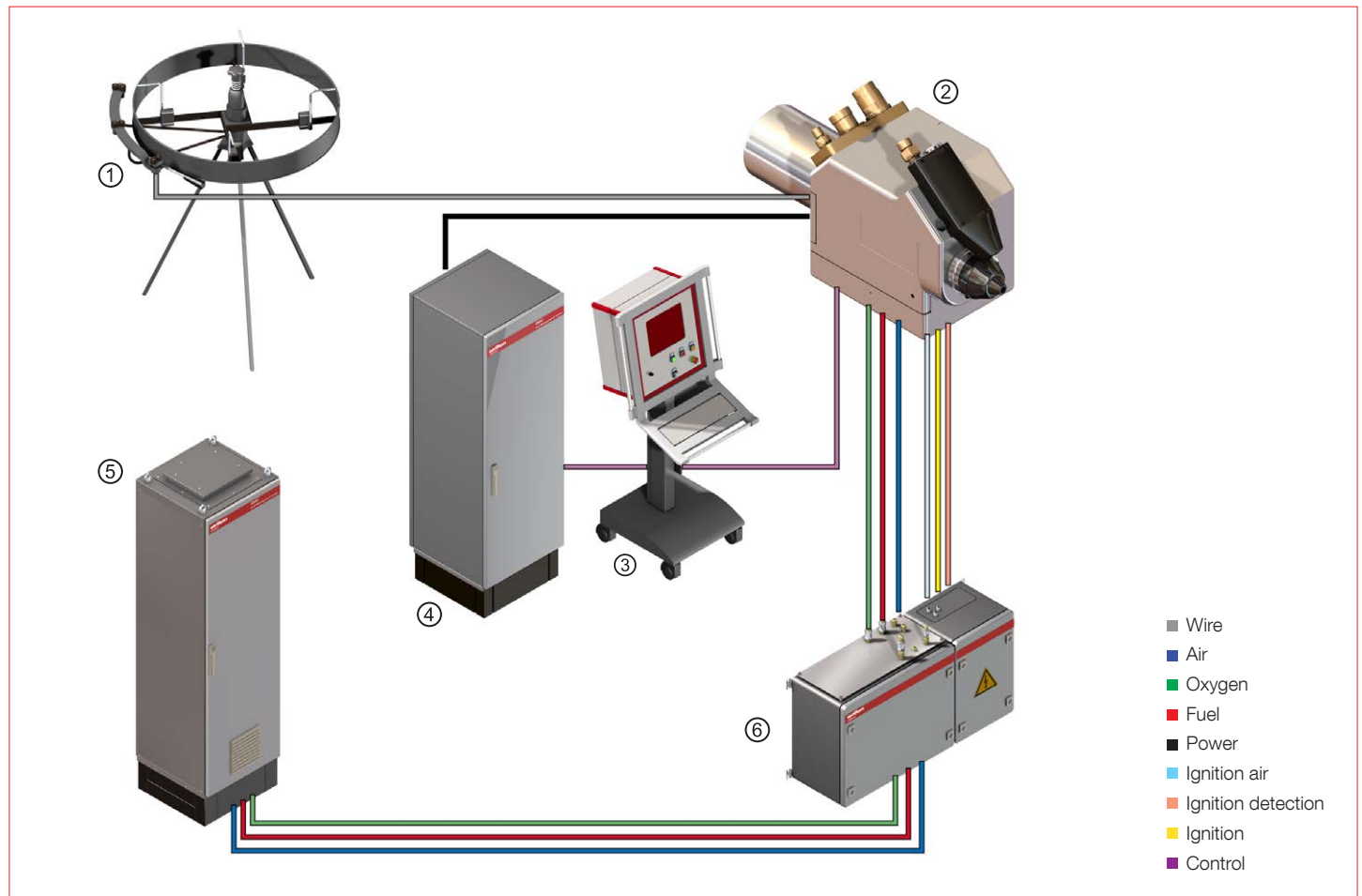
### 6. Metco 6A Air Control Unit:

With two filters and a large quarter turn valve cut-off, the 6A permits precise and rapid adjustment of air pressure to the 3AF Air Flowmeter.

# Spray Systems

## Ensure the Success of Your Application with the Right System

### MultiCoat™ Advanced Automated Wire Combustion Spray system



#### 1. Metco 2W Wire Control Unit:

Essential for fast spray rates, this unit controls tension and straightens the wire as it uncoils, reducing wear on the gears, nozzle and wire guides.

#### 2. Metco EGD-K Combustion Wire Gun:

Designed for use with Oerlikon Metco's advanced, fully-automated system platforms, the EGD-K has closed-loop control and communication with the system to provide the ultimate in uniform wire and process gas delivery. As a result, efficiency is maximized and coating quality ensured.

#### 3. MultiCoat Operator's Desk:

An industrial-quality PC-based user interface that allows easy input, storage, monitoring and management of the entire coating process using object-oriented, on-screen graphics. Allows recall of spray recipes and related customer-defined data from memory. System diagnostics and alarms are displayed on-screen for rapid intervention by the operator.

#### 4. Process Control Center:

The brain of the system that contains all electrical controls, including the PLC and system safeties. It controls the entire spray process in real time and collects process data as well as fault messages.

#### 5. Gas Management Center:

Using proven mass-flow controllers, this unit controls the delivery of all system process gases with high precision and safety.

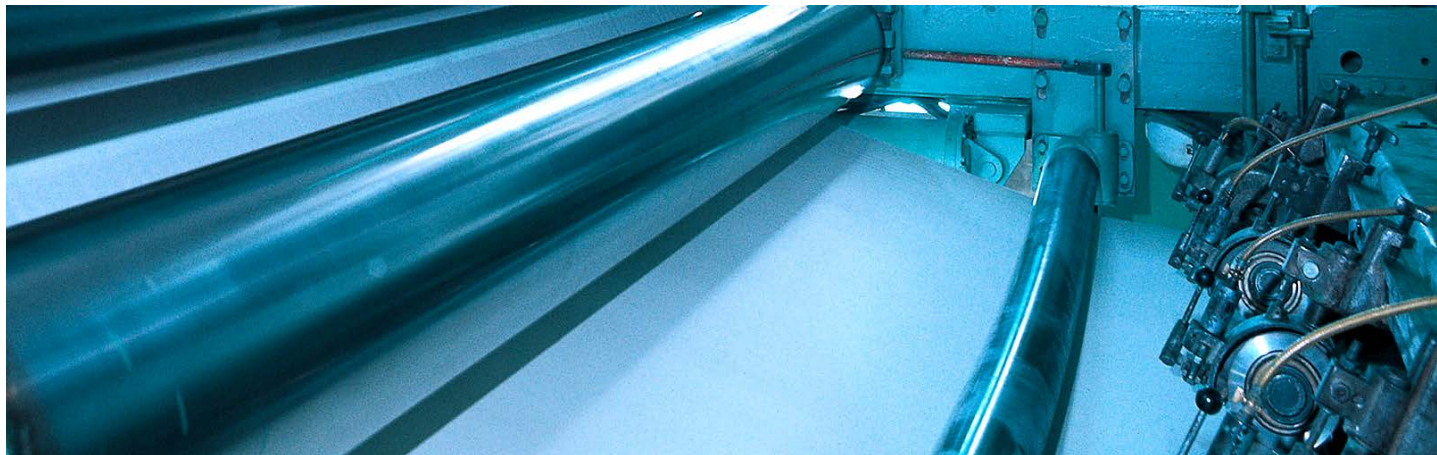
#### 6. JAMBox:

A centralized junction and monitoring device for the system, the JAMBox houses the sensors to detect measured values electric current, process gases and wire speed. Using transducers, it communicates the measured values to the Process Control Center via a serial data bus.



# Flexible Choices

## Combustion Wire Spray Guns and Extension Modules



Utilized in the paper, pulp and printing industries, combustion wire spray increases component efficiency and lifetime.

### 16E Handheld Spray Gun



16E

### 5K Machine-Mount Spray Gun



5K



5K-6CE

### Extension modules for coating of internal surfaces



5XT



3XT-1

#### Available models

Model	Fuel Gas <sup>a</sup>	Speed	Wire Type
16E	Acetylene	Standard	Hard wires
16E-H	Acetylene	High	Soft wires
16E-HT	Propylene/ Propane	High	Al, Zn, Zn-Al
16E-P	Propane	Standard	Hard wires

- Unique built-in safety handle
- Rugged and low maintenance
- Gun can operate in any position
- Lightweight and comfortably balanced
- Low gas consumption, even at high spray rates
- Powerful air turbine motor – no electricity
- Superior resistance to jamming and backfiring
- Versatile optional hardware for a variety of coating needs with quick changeovers

#### Available models

Model	CE Conformance	Controller
5K	No	3GF / 3AF
5KE	Yes	3GF / 3AF
5K-6C	No	6C
5K-6CE	Yes	6CEW
EGD-K	Yes	MultiCoat

- Durable with very stable operation
- Constant motor control over a wide range for uniform wire feed
- Optimized spray efficiency denser, highly uniform, longer lasting thermal coatings
- For short spray runs as well as complex, large scale production
- Dynamic braking system stops wire feed immediately
- Motor can be turned off and on without altering speed settings
- Compact control system mounts directly onto gun for easy wire feed adjustment
- Versatile optional hardware for a variety of coating needs with quick changeovers

#### Available models

Model	Length
5XT	150 mm (6 in)
3XT-1	305 mm (1 ft)
3XT-2	610 mm (2 ft)
3XT-3	915 mm (3 ft)

- Ideally suited for spraying internal bores and diameters
- Applies high quality coatings
- Designed for use with all Oerlikon Metco Combustion Wire Spray Guns and wire sizes
- Standard configuration uses acetylene fuel gas; configurations for other fuel gases available on request

<sup>a</sup> As equipped at factory. Optional hardware available for different gases.

# Flexible Choices

## System Platform Choices That Suit Your Operations

### Manual

#### Metco 3AF / Metco 3GF

The ultimate in simplicity! Accurately set gas flows using the 3GF gas flowmeter and 3AF air flowmeter in either NLPM or SCFH units. These units are easily hung on the wall in the acoustical enclosure at eye level for operational convenience. Should be used in conjunction with the Oerlikon Metco 6A air control unit.

**Recommended for:** For occasional coating work by budget conscious operations using a limited number of spray parameters on non-critical components.



### Semi-automatic

#### Metco 6C / Metco 6CEW (CE)

In addition to providing convenient semi-automatic operation, monitoring, and control of the Metco 5K-6C or Metco 5K-6CE gun, the Metco 6C and Metco 6CEW are multi-gas-compatible units capable of operating with all fuel gas options and gas parameters. Designed to withstand the rigorous demands of modern production and job shop environments, it's easy to use and maintain, delivers excellent coating efficiency and quality, and reduces operating costs, while increasing operational safety.

**Recommended for:** Production spray operations using a limited number of spray parameters.



### Advanced

#### Oerlikon Metco MultiCoat

An advanced system platform, MultiCoat employs a “twin brain” PC/PLC design to ensure superior accuracy and repeatability. The operator console simplifies data entry and recall and a generous recipe storage capability guarantees precision parameter recall again and again. MultiCoat system platforms have multi-level diagnostics and alarm systems, and built in parameter drift limits.

**Recommended for:** Production or R&D spray operations where precision and accuracy are critical.



## Accessories, Handling and Peripheral Equipment

## 13



# Roadrunner

## Wire Combustion Spraying That's Going Places ...



The Roadrunner, our leading-edge mobile wire combustion thermal spraying system, is compact and easy to operate.

With the remarkable Roadrunner™ mobile wire combustion spray system, Oerlikon Metco has opened up a whole new world of opportunities. The only mobile system of its kind that's all-terrain, the Roadrunner makes maintenance and repair projects once impossible not only achievable, but profitable.

Compact and easy-to-operate, this is a complete, self-contained transportable wire combustion system designed to handle a heavy-duty workload. Built with top-quality, time-proven Oerlikon Metco components, the Roadrunner is equally functional in-shop or in remote field locations. For maximum convenience and flexibility, Roadrunner can be ordered with Metco 16E Wire Spray Gun model of your choice.

Included with every Roadrunner Mobile System:

- Roadrunner wheeled cart
- Choice of Metco 16E Combustion Wire Spray Gun
- 3GF Gas Flowmeter
- 3AF Air Flowmeter
- 6A Air Control Unit
- Fuel and oxygen regulators
- Hose kit
- 2W Wire Stand (attached to the Roadrunner cart)
- Gun holding bracket

Already have a Oerlikon Metco wire combustion system? We can supply you with the Roadrunner mobile cart prepared to accept your existing wire spray components.



Roadrunner Mobile Wire Combustion Spray System (Hoses not shown; gas cylinders not included)

# Services

## Oerlikon Metco Essential Services for On-Going Success



### Training

Let our staff professionally train your personnel on the safe operation and maintenance of your thermal spray systems.



### Field service

Qualified, factory-trained field service technicians will keep your systems in peak operating condition. Our field services include flexible maintenance contracts, emergency break-down repairs and troubleshooting help.

### Traceability

Fully traceable calibrations, including gas flows and pressures, ensure the accuracy and repeatability of your spray facilities.

### Application consultation services

Our thermal spray professionals can consult with you for a total application solution with optimized benefits and value.



### Consumable and spare parts support

Oerlikon Metco brand consumable and spare parts keep your coating facilities operating with repeatable results.

### Simplified sourcing

Simplify your purchasing decisions with Oerlikon Metco quality consumable parts, materials and after-sale services.



### Global sales and logistics

Oerlikon Metco professionals are prepared to help, wherever your location.

### Make or buy — it's your decision

If you would prefer to outsource your coating work, Oerlikon Metco is ready to serve you. We have first-rate coating facilities on every major continent around the globe. The surface engineering experts at the Oerlikon Metco coating service facility of your choice are ready to consult with you and provide your company with expert coating and machining services.



# Combustion Wire Spray

## Advanced technology solutions and services



### Perfect solutions through optimum materials and innovative technologies

Oerlikon Metco is a global leader in surface engineering solutions and services offering:

- A broad range of thermal spray, laser cladding and other advanced surface technology equipment and materials
- Integrated systems
- Specialized coating and surface enhancement services
- Manufactured components for the turbine, automotive and other industries
- Customer support services

Oerlikon Metco provides a comprehensive manufacturing, distribution and service network, catering to aviation, power generation, automotive and other strategic growth industries.

To take control of your surface engineering challenges, contact your Oerlikon Metco sales office, visit our website at [www.oerlikon.com/metco](http://www.oerlikon.com/metco) or email us at [info.metco@oerlikon.com](mailto:info.metco@oerlikon.com)

### About Oerlikon Metco

Oerlikon Metco enhances surfaces that bring benefits to customers through a uniquely broad range of surface technologies, equipment, materials, services, specialized machining services and components. The surface technologies such as Thermal Spray and Laser Cladding improve the performance and increase efficiency and reliability. Oerlikon Metco serves industries such as aviation, power generation, automotive, oil & gas, industrial and other specialized markets and operates a dynamically growing network of more than 40 sites in EMEA, Americas and Asia Pacific. Oerlikon Metco, together with Oerlikon Balzers, belongs to the Surface Solutions Segment of the Switzerland-based Oerlikon Group (SIX: OERL).

Information is subject to change without prior notice.

Air Permits Division

# Calculations Guidance Package

## Metal Spraying



Compiled, published, and distributed by the  
Air Permits Division  
Texas Commission on Environmental Quality  
Post Office Box 13087 - MC 163  
Austin, Texas 78711-3087  
(512) 239-1250

## **I. INSTRUCTIONS**

This manual was developed for the purpose of providing a guide for calculating emissions at metal spraying facilities. Tables are provided for identifying the required input data and calculating emissions. In most cases, the upper portions of the tables are used to record input data/calculation parameters. Use the equations which follow the table to perform the emission calculations and record the results in the lower portion of the table.

**NOTE:** The applicant should complete these forms for maximum operating conditions and actual equipment specifications for the facility. For deposit efficiency and control device efficiency, refer to the manufacturers data.



**A. TABLE 1**  
WIRE/POWDER DATA

TABLE 1: Wire/Powder Usage		
Wire/Powder Type	Max Used lbs/hr	Max Used lbs/yr
a.		
b.		
c.		

Wire/Powder Content			
Wire/Powder Constituents*	Content %		
	Wire #1	Wire #2	Wire #3
Iron			
Nickel			
Chrome			
Aluminum			
Copper			
Silicon			
_____			
_____			
_____			

\* List constituents and percent content for each constituent based on manufacturer data.

**NOTE:** If the metal spraying process uses a gas, i.e. acetylene to produce the flame to melt the spray wire/powder or if an inert gas is used to propel the molten metal, identify the gas(es) used and the gas usage rates (cf/hr and cf/yr). The reviewing engineer will use this information to determine if emissions from these gases need to be included in the permit.

## B. TABLE 2: EMISSION CALCULATIONS

Emissions from metal spraying operations must be determined. Operating parameters that influence emissions are gun spray rate, gun spray time, number of guns used, powder/wire type, spray environment, i.e. in a booth versus not in a booth, and type abatement equipment used.

Two methods for calculating emissions are provided. Either method will be accepted.

Method # 1 is based on spray deposit efficiency and assumes all material not deposited has a potential to be emitted. If Method #1 is used to calculate emissions, use equation 2a from Table # 2 to calculate Line 6, E1-PM10 Uncontrolled.

Method # 2 employs an emission factor expressed as pounds of emissions per pound of powder or wire sprayed. If Method # 2 is used to calculate emissions, use equation 2b from Table # 2 to calculate Line #6, E1-PM10 Uncontrolled.

The following parameters will be used to calculate emissions:

<u>Line #</u>	<u>Parameter</u>	<u>Booth1</u>	<u>Booth2</u>
1.	SG = Number of spray guns used at one time?	_____	_____
2.	SR = Gun spray rate (lbs/hr) for each powder/wire?	_____	_____
3.	TH = Maximum spray time per hour (min/hr)?		
	Wire 1	_____	_____
	Wire 2	_____	_____
4.	TY = Max spray time per year (Hrs./Yr)?		
	Wire 1	_____	_____
	Wire 2	_____	_____
5.	DF = Deposit factor (%)?		
	Wire 1	_____	_____
	Wire 2	_____	_____
6.	EF = Emission Factor (lbs emissions/lb wire sprayed)	0.06*	0.06*
7.	HE = Hood Capture Efficiency?	_____	_____
8.	AE = Control Device Efficiency?	_____	_____

\* 0.06 is a conservative estimate. If an emission factor exists which is deemed to be more accurate than the one provided, the applicant may use it provided that proper justification for the factor is given.

**STEP 1: *Uncontrolled PM<sub>10</sub> Calculation***

Calculate the uncontrolled PM<sub>10</sub> emissions for each source and for each powder/wire sprayed. A source may be one gun or multiple guns operating simultaneously in one spray booth/chamber.

Use Equation 2a if the “deposit efficiency” method is used.

Use Equation 2b if the “emission factor” method is used.

Equation 2c for calculating annual emissions may be used with either method.

$$E1 = SR \times TH/60 \times [1 - (DF\%/100)] \quad (\text{Equation 2a})$$

$$E1 = SR \times TH/60 \times 0.06 \quad (\text{Equation 2b})$$

$$E2 = E1 \times TY \quad (\text{Equation 2c})$$

**STEP 2: *Open Area Spraying Calculations***

If metal spraying is conducted in an enclosed spray booth/chamber, go to Step 3. If spraying is conducted in an open/non enclosed area and a hood is used to capture emissions, then fugitive emissions and emissions captured must be determined.

$$FUG1 = E1 \times [1 - (HE\%/100)]; \text{ FUG1 is hourly fugitive PM}_{10} \text{ emissions}$$

$$FUG2 = E2 \times [1 - (HE\%/100)]; \text{ FUG2 is annual fugitive PM}_{10} \text{ emissions}$$

$$E3 = E1 \times [HE\%/100]; \quad E3 \text{ is hourly PM}_{10} \text{ emissions captured by the hood}$$

$$E4 = E2 \times [HE\%/100]; \quad E4 \text{ is annual PM}_{10} \text{ emissions captured by the hood}$$

$$E5 = E3 \times [1 - (AE\%/100)]; \quad E5 \text{ is hourly PM}_{10} \text{ emissions from control equipment}$$

$$E6 = E4 \times [1 - (AE\%/100)]; \quad E6 \text{ is annual PM}_{10} \text{ emissions from control equipment}$$

**STEP 3: *Spray Booth Calculation***

When metal spraying is conducted inside an enclosed booth/chamber with emissions exhausted to an abatement device, use the following equations to calculate the PM<sub>10</sub> emitted to the atmosphere.

$$E5 = E1 \times [1 - (AE\%/100)]$$

$$E6 = E2 \times [1 - (AE\%/100)]$$

**Note:** E5 and E6 must be calculated for each spray booth and for each powder/wire sprayed. The total hourly emissions from each booth will be the E5 for the worst case hourly spray rate. The annual emissions from each booth will be the sum of the E6's for each powder/wire sprayed.

**Step 4: Speciated Emission Calculations.**

Speciated emissions must be determined for each constituent contained in the powder/wire sprayed.

Speciated emissions for each constituent are estimated to be the product of the fraction of the compound contained in the powder and the total PM<sub>10</sub> emissions for the specific wire.

SEH(I) = E5 x (I %)/100 ; where SEH(I) is the hourly emission rate in pounds for compound (I).

SEY(I) = E6 x (I %)/100; where SEY(I) is the annual emissions in tons for compound (I)

**C. TABLE 3: CONTROLLED EMISSIONS**

E1 = Total Uncontrolled PM<sub>10</sub> (lb/hr) (See Table 2). \_\_\_\_\_

E2 = Total Uncontrolled PM<sub>10</sub> (lb/yr) (See Table 2). \_\_\_\_\_

E5 = Total PM<sub>10</sub> (lb/hr) Controlled. \_\_\_\_\_

E6 = Total PM<sub>10</sub> (lb/yr) Controlled. \_\_\_\_\_

E7 = Fugitive PM<sub>10</sub> (lb/hr). \*\*. \_\_\_\_\_

E8 = Fugitive PM<sub>10</sub> (lb/yr). \*\*. \_\_\_\_\_

\*\*. If metal spraying is conducted in a spray booth with a negative pressure, this calculation is not required.

**D. TABLE 4: SPECIATED EMISSIONS**

Hourly emissions, SEH(xi) and annual emissions, SEY(xi) for each constituent of the powder or wire used must be quantified as described in STEP 4 and recorded.

SEH (x1) = \_\_\_\_\_ SEH (x1) = \_\_\_\_\_

SEY (x2) = \_\_\_\_\_ SEY (x2) = \_\_\_\_\_

# METAL SPRAYING FACILITY

## EXAMPLE CALCULATIONS

**NOTE:** The applicant should complete these forms for maximum operating conditions and actual equipment specifications for the facility. For deposit efficiency and control device efficiency, refer to the manufacturers data.

### A. TABLE 1

#### WIRE/POWDER DATA

TABLE 1: Wire/Powder Usage		
Wire/Powder Type	Max Used lbs/hr	Max Used lbs/yr
a. MONEL	0	0
b. METCOLY #4	0	0
c. METCO #405	10	5000

Wire/Powder Content			
Wire/Powder Constituents*	Content %		
	Wire #1	Wire #2	Wire #3
Iron	1.5	66	0
Nickel	67	12	80
Chrome	0	17	0
Aluminum	0.1	0	20
Copper	30.1	0	0
Silicon	0.1	1	0
_____			
_____			
_____			

\* List constituents and percent content for each constituent based on manufacturer data.

## B. TABLE 2: EMISSION CALCULATIONS

<u>Line #</u>	<u>Parameter</u>	<u>Booth1</u>	<u>Booth2</u>
1.	SG = Number of spray guns used at one time?	<u>1</u>	_____
2.	SR = Gun spray rate (lbs/hr) for each powder/wire?	<u>10</u>	_____
3.	TH = Maximum spray time per hour (min/hr)?		
	Wire 1	<u>30</u>	_____
	Wire 2	_____	_____
4.	TY = Max spray time per year (Hrs./Yr)?		
	Wire 1	<u>1,000</u>	_____
	Wire 2	_____	_____
5.	DF = Deposit factor (%)?		
	Wire 1	<u>75%</u>	_____
	Wire 2	_____	_____
6.	EF = Emission Factor (lbs emissions/lb wire sprayed)	<u>Not applicable in this example</u>	
7.	HE = Hood Capture Efficiency?	<u>Not applicable in this example</u>	
8.	AE = Control Device Efficiency?	<u>99.999%</u>	_____

### STEP 1: Uncontrolled PM<sub>10</sub> Emission Calculation

$$E1 = 10.0 \times 30/60 \times [1-(75/100)] = 1.25 \text{ lbs/hr}$$

$$E2 = 1.25 \text{ lbs/hr} \times 1,000 \text{ Hr/Yr} = 1250 \text{ lbs/yr}$$

### STEP 2: Open Area Spraying Calculation (Not Applicable This Example)

### STEP 3: Spray Booth Calculation

$$E5 = 1.25 \times [1-(99.999/100)] = 1.25E^{-5} \text{ lbs/Hr}$$

$$E6 = 1250 \times [1-(99.999/100)] = 0.0125 \text{ lbs/Yr.}$$

### STEP 4: Speciated Emission Calculation

$$SEH(Ni) = 0.0000125 \times 0.80 = 0.00001 \text{ lb/hr}$$

$$SEY (Ni) = 0.0125 \times 0.80 = 0.01 \text{ lb/yr}$$

$$SEH(Al) = 0.0000125 \times 0.20 = 0.0000025 \text{ lb/hr}$$

$$SEY(Al) = 0.0125 \times 0.20 = 0.0025 \text{ lb/yr}$$

### C. TABLE 3: CONTROLLED EMISSIONS

E1 = Total Uncontrolled PM <sub>10</sub> (lb/hr)	<u>1.25 lb/hr</u>
E2 = Total Uncontrolled PM <sub>10</sub> (lb/yr)	<u>1250 lbs/yr</u>
E5 = Total PM <sub>10</sub> (lb/hr) Controlled.	<u>1.25 E<sup>-5</sup> lbs/hr</u>
E6 = Total PM <sub>10</sub> (lb/yr) Controlled.	<u>0.0125 tons/yr</u>

**Note:** In this example, metal spraying is conducted in a BOOTH, thus calculation of fugitive emissions, i.e. E7 and E8 is not required.

### D. TABLE 4: SPECIATED EMISSIONS

SEH (Ni)	0.00001	lbs/hr
SEY (Ni)	0.01	lbs/yr
SEH (Al)	0.0000025	lbs/hr
SEY (Al)	0.0025	lbs/yr

# SAFETY DATA SHEET



Date of issue/Date of revision 6 February 2023

Version 30

## Section 1. Identification

**Product name** : 515K011 BASE COMPONENT  
**Product code** : 515K011 BASE COMPONENT  
**Other means of identification** : Not available.  
**Product type** : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

**Product use** : Industrial applications.  
**Use of the substance/mixture** : Coating.  
**Uses advised against** : Not applicable.

**Manufacturer** : PPG Aerospace PRC-DeSoto  
12780 San Fernando Road  
Sylmar, CA 91342  
Phone: 818 362 6711  
**Emergency telephone number** : (412) 434-4515 (U.S.)  
(514) 645-1320 (Canada)  
01-800-00-21-400 (Mexico)

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
**Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 2  
ACUTE TOXICITY (inhalation) - Category 4  
SKIN IRRITATION - Category 2  
SERIOUS EYE DAMAGE - Category 1  
CARCINOGENICITY - Category 1A  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 32.7% (oral), 55.9% (dermal), 55.9% (inhalation)



## Section 2. Hazards identification

This product contains TiO<sub>2</sub> which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many products, TiO<sub>2</sub> is utilized as a raw material in a liquid coating formulation. In this case, the TiO<sub>2</sub> particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO<sub>2</sub> when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8).

### GHS label elements

#### Hazard pictograms



#### Signal word

: Danger

#### Hazard statements

: Highly flammable liquid and vapor.  
Causes skin irritation.  
Causes serious eye damage.  
Harmful if inhaled.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.  
May cause cancer.  
May cause damage to organs through prolonged or repeated exposure. (hearing organs)

### Precautionary statements

#### Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash thoroughly after handling.

#### Response

: IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

#### Storage

: Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

#### Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

#### Supplemental label elements

: Sanding and grinding dusts may be harmful if inhaled. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. NTP, IARC and OSHA have classified chromium (+6) compounds as carcinogenic. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when

## Section 2. Hazards identification

heated.  
**Hazards not otherwise classified** : Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture  
**Product name** : 515K011 BASE COMPONENT

Ingredient name	%	CAS number
alc , not containing asbestiform fibres	≥10 - ≤20	14807-96-6
n-butyl acetate	≥10 - ≤20	123-86-4
antimony nickel titanium oxide yellow	≥10 - ≤20	8007-18-9
4-methylpentan-2-one	≥5.0 - ≤10	108-10-1
xylene	≥5.0 - ≤10	1330-20-7
calcium chromate	≥1.0 - ≤5.0	13765-19-0
butan-1-ol	≥1.0 - ≤4.5	71-36-3
titanium dioxide	≥1.0 - ≤5.0	13463-67-7
butanone	≥1.0 - ≤4.2	78-93-3
ethylbenzene	≤1.9	100-41-4
crystalline silica, respirable powder (<10 microns)	<1.0	14808-60-7

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in Section 8.**

## Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

### Description of necessary first aid measures

**Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

**Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

**Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

**Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

**Eye contact** : Causes serious eye damage.

## Section 4. First aid measures

- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Can cause central nervous system (CNS) depression.

### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
dryness  
cracking  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

## Section 5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon oxides  
nitrogen oxides  
halogenated compounds  
metal oxide/oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

#### Protective measures

: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

#### Special precautions

: Ingestion of product or cured coating may be harmful. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

#### Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

#### Conditions for safe storage, including any incompatibilities

: Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Isocyanate, not containing asbestiform fibres	ACGIH TLV (United States, 1/2022). TWA: 2 mg/m <sup>3</sup> 8 hours. Form: Respirable OSHA PEL Z3 (United States). TWA: 2 mg/m <sup>3</sup>
n-butyl acetate	OSHA PEL (United States, 5/2018). TWA: 710 mg/m <sup>3</sup> 8 hours. TWA: 150 ppm 8 hours. ACGIH TLV (United States, 1/2022). [Butyl acetates] STEL: 150 ppm 15 minutes. TWA: 50 ppm 8 hours.
antimony nickel titanium oxide yellow	OSHA PEL (United States).



## Section 8. Exposure controls/personal protection

4-methylpentan-2-one

xylene

calcium chromate

butan-1-ol

titanium dioxide

butanone

TWA: 0.5 mg/m<sup>3</sup>, (as Sb)  
 TWA: 0.5 mg/m<sup>3</sup>, (as Sb) Form: Total dust  
**ACGIH TLV (United States, 1/2022). [Nickel, insoluble inorganic compounds]**  
 TWA: 0.2 mg/m<sup>3</sup>, (as Ni) 8 hours. Form: Inhalable fraction  
**ACGIH TLV (United States).**  
 TWA: 0.2 mg/m<sup>3</sup> Form: Total dust  
**OSHA PEL (United States, 5/2018). [Nickel, metal and insoluble compounds]**  
 TWA: 1 mg/m<sup>3</sup>, (as Ni) 8 hours.  
**ACGIH TLV (United States, 1/2022).**  
 STEL: 75 ppm 15 minutes.  
 TWA: 20 ppm 8 hours.  
**OSHA PEL (United States, 5/2018).**  
 TWA: 410 mg/m<sup>3</sup> 8 hours.  
 TWA: 100 ppm 8 hours.  
**ACGIH TLV (United States, 1/2022). [xylene]**  
 STEL: 651 mg/m<sup>3</sup> 15 minutes.  
 TWA: 434 mg/m<sup>3</sup> 8 hours.  
 TWA: 20 ppm 8 hours.  
**OSHA PEL (United States, 5/2018). [Xylenes]**  
 TWA: 435 mg/m<sup>3</sup> 8 hours.  
 TWA: 100 ppm 8 hours.  
**ACGIH TLV (United States).**  
 TWA: 0.05 mg/m<sup>3</sup> Form: Total dust  
**ACGIH TLV (United States, 1/2022).**  
 TWA: 0.001 mg/m<sup>3</sup>, (measured as Cr) 8 hours.  
**OSHA PEL (United States, 5/2018). [Chromium (VI) compounds]**  
 TWA: 0.005 mg/m<sup>3</sup>, (as Cr) 8 hours.  
**OSHA PEL Z2 (United States, 2/2013). [Chromic acid and chromates]**  
 CEIL: 1 mg/10m<sup>3</sup>  
**OSHA PEL (United States).**  
 TWA: 5 mg/m<sup>3</sup>  
**ACGIH TLV (United States, 1/2022).**  
 TWA: 20 ppm 8 hours.  
**OSHA PEL (United States, 5/2018).**  
 TWA: 300 mg/m<sup>3</sup> 8 hours.  
 TWA: 100 ppm 8 hours.  
**OSHA PEL (United States, 5/2018).**  
 TWA: 15 mg/m<sup>3</sup> 8 hours. Form: Total dust  
**ACGIH TLV (United States, 1/2022).**  
 TWA: 2.5 mg/m<sup>3</sup> 8 hours. Form: respirable fraction, finescale particles  
**ACGIH TLV (United States, 1/2022).**  
 STEL: 885 mg/m<sup>3</sup> 15 minutes.  
 STEL: 300 ppm 15 minutes.  
 TWA: 590 mg/m<sup>3</sup> 8 hours.

## Section 8. Exposure controls/personal protection

ethylbenzene

TWA: 200 ppm 8 hours.  
**OSHA PEL (United States, 5/2018).**

TWA: 590 mg/m<sup>3</sup> 8 hours.

TWA: 200 ppm 8 hours.

**ACGIH TLV (United States, 1/2022).**

**Ototoxicant.**

TWA: 20 ppm 8 hours.

**OSHA PEL (United States, 5/2018).**

TWA: 435 mg/m<sup>3</sup> 8 hours.

TWA: 100 ppm 8 hours.

**ACGIH TLV (United States, 1/2022). [Silica, crystalline]**

TWA: 0.025 mg/m<sup>3</sup> 8 hours. Form:

Respirable

**OSHA PEL Z3 (United States, 6/2016).**

TWA: 10 mg/m<sup>3</sup> / (%SiO<sub>2</sub>+2) 8 hours. Form:

Respirable

TWA: 250 mppcf / (%SiO<sub>2</sub>+5) 8 hours. Form:

Respirable

**OSHA PEL (United States, 5/2018). [Silica, crystalline]**

TWA: 50 µg/m<sup>3</sup> 8 hours. Form: Respirable dust

crystalline silica, respirable powder (&lt;10 microns)

### Key to abbreviations

A	= Acceptable Maximum Peak
ACGIH	= American Conference of Governmental Industrial Hygienists.
C	= Ceiling Limit
F	= Fume
IPEL	= Internal Permissible Exposure Limit
OSHA	= Occupational Safety and Health Administration.
R	= Respirable
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances

S	= Potential skin absorption
SR	= Respiratory sensitization
SS	= Skin sensitization
STEL	= Short term Exposure limit values
TD	= Total dust
TLV	= Threshold Limit Value
TWA	= Time Weighted Average

### Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures** : Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

## Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Chemical splash goggles and face shield.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Gloves** : For prolonged or repeated handling, use the following type of gloves:
- Recommended: polyvinyl alcohol (PVA), neoprene, Viton®, butyl rubber  
Not recommended: nitrile rubber
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The respiratory protection shall be in accordance to 29 CFR 1910.134.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Green.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not applicable.
- Melting point** : Not available.
- Boiling point** : >37.78°C (>100°F)
- Flash point** : Closed cup: 15.56°C (60°F)
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Flammability** : Not available.



## Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits : Not available.

Evaporation rate : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1.31

Density ( lbs / gal ) : 10.93

Solubility(ies)

Media	Result
Cold water	Partially soluble

Partition coefficient: n-octanol/water : Not applicable.

Viscosity : Kinematic (40°C (104°F)): >21 mm<sup>2</sup>/s (>21 cSt)

VOC : 509 g/l

## Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides halogenated compounds metal oxide/oxides

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
n-butyl acetate	LC50 Inhalation Vapor	Rat	>21.1 mg/l	4 hours
	LC50 Inhalation Vapor	Rat	2000 ppm	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10.768 g/kg	-
4-methylpentan-2-one	LC50 Inhalation Vapor	Rat	11 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	2.08 g/kg	-
xylene	LD50 Oral	Rat	2.08 g/kg	-
	LD50 Dermal	Rabbit	1.7 g/kg	-

## Section 11. Toxicological information

calcium chromate	LD50 Oral	Rat	4.3 g/kg	-
	LD50 Oral	Rat	327 mg/kg	-
butan-1-ol	LC50 Inhalation Vapor	Rat	24000 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	3400 mg/kg	-
titanium dioxide	LD50 Oral	Rat	790 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>6.82 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
butanone	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-

**Conclusion/Summary** : There are no data available on the mixture itself.

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

**Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Sensitization****Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Mutagenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Carcinogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Classification**

Product/ingredient name	OSHA	IARC	NTP
4-methylpentan-2-one	-	2B	-
xylene	-	3	-
calcium chromate	+	1	Known to be a human carcinogen.
titanium dioxide	-	2B	-
ethylbenzene	-	2B	-
crystalline silica, respirable powder (<10 microns)	-	1	Known to be a human carcinogen.

**Carcinogen Classification code:**

**IARC:** 1, 2A, 2B, 3, 4

**NTP:** Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

**OSHA:** +

**Not listed/not regulated:** -

**Reproductive toxicity**

## Section 11. Toxicological information

**Conclusion/Summary** : There are no data available on the mixture itself.

### Teratogenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Talc , not containing asbestiform fibres	Category 3	-	Respiratory tract irritation
n-butyl acetate	Category 3	-	Narcotic effects
4-methylpentan-2-one	Category 3	-	Narcotic effects
xylene	Category 3	-	Respiratory tract irritation
butan-1-ol	Category 3	-	Respiratory tract irritation
butanone	Category 3	-	Narcotic effects
	Category 3	-	Narcotic effects

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
calcium chromate	Category 2	-	-
ethylbenzene	Category 2	-	hearing organs
crystalline silica, respirable powder (<10 microns)	Category 1	inhalation	-

**Target organs** : Contains material which causes damage to the following organs: brain.  
Contains material which may cause damage to the following organs: blood, kidneys, lungs, the nervous system, liver, peripheral nervous system, cardiovascular system, upper respiratory tract, skin, central nervous system (CNS), ears, eye, lens or cornea, nose/sinuses.

### Aspiration hazard

Name	Result
xylene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1

### Information on the likely routes of exposure

#### Potential acute health effects

**Eye contact** : Causes serious eye damage.  
**Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.  
**Skin contact** : Causes skin irritation. Defatting to the skin.  
**Ingestion** : Can cause central nervous system (CNS) depression.

#### Over-exposure signs/symptoms

**Eye contact** : Adverse symptoms may include the following:  
 pain  
 watering  
 redness

## Section 11. Toxicological information

**Inhalation** : Adverse symptoms may include the following:

respiratory tract irritation  
coughing  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness

**Skin contact** : Adverse symptoms may include the following:

pain or irritation  
redness  
dryness  
cracking  
blistering may occur

**Ingestion** : Adverse symptoms may include the following:  
stomach pains**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Conclusion/Summary** : There are no data available on the mixture itself. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. This product contains TiO<sub>2</sub> which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many products, TiO<sub>2</sub> is utilized as a raw material in a liquid coating formulation. In this case, the TiO<sub>2</sub> particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO<sub>2</sub> when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8). Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

**Short term exposure**

**Potential immediate effects** : There are no data available on the mixture itself.

**Potential delayed effects** : There are no data available on the mixture itself.

**Long term exposure**

**Potential immediate effects** : There are no data available on the mixture itself.

**Potential delayed effects** : There are no data available on the mixture itself.

**Potential chronic health effects**

**General** : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

## Section 11. Toxicological information

**Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : No known significant effects or critical hazards.

**Reproductive toxicity** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
515K011 BASE COMPONENT	2676.5	7648.3	N/A	27.5	3.6
n-butyl acetate	10768	N/A	N/A	N/A	N/A
4-methylpentan-2-one	2080	N/A	N/A	11	1.5
xylene	4300	1700	N/A	11	1.5
calcium chromate	327	N/A	N/A	N/A	N/A
butan-1-ol	790	3400	N/A	24	N/A
butanone	2737	6480	N/A	N/A	N/A
ethylbenzene	3500	17800	N/A	17.8	1.5

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
n-butyl acetate	Acute LC50 18 mg/l	Fish	96 hours
4-methylpentan-2-one	Acute LC50 >179 mg/l	Fish	96 hours
butan-1-ol	Acute LC50 1376 mg/l	Fish	96 hours
titanium dioxide	Acute LC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
ethylbenzene	Acute EC50 1.8 mg/l Fresh water	Daphnia	48 hours
	Chronic NOEC 1 mg/l Fresh water	Daphnia - Ceriodaphnia dubia	-

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
n-butyl acetate	TEPA and OECD 301D	83 % - Readily - 28 days	-	-
4-methylpentan-2-one	OECD 301F	83 % - Readily - 28 days	-	-
ethylbenzene	-	79 % - Readily - 10 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
n-butyl acetate	-	-	Readily
4-methylpentan-2-one	-	-	Readily
xylene	-	-	Readily
ethylbenzene	-	-	Readily

### Bioaccumulative potential

## Section 12. Ecological information

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
n-butyl acetate	2.3	-	low
4-methylpentan-2-one	1.9	-	low
xylene	3.12	7.4 to 18.5	low
butan-1-ol	1	-	low
butanone	0.3	-	low
ethylbenzene	3.6	79.43	low

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

## 14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	II	II	II
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	(calcium chromate)	Not applicable.



## 14. Transport information

Product RQ (lbs)	231.66	Not applicable.	Not applicable.
RQ substances	(calcium chromate, xylene)	Not applicable.	Not applicable.

### Additional information

- DOT** : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not applicable.

## Section 15. Regulatory information

### United States

**United States inventory (TSCA 8b)** : All components are active or exempted.

**United States - TSCA 12(b) - Chemical export notification:**

calcium chromate

Annual notification

### SARA 302/304

**SARA 304 RQ** : Not applicable.

### Composition/information on ingredients

No products were found.

### SARA 311/312

**Classification** : FLAMMABLE LIQUIDS - Category 2  
ACUTE TOXICITY (inhalation) - Category 4  
SKIN IRRITATION - Category 2  
SERIOUS EYE DAMAGE - Category 1  
CARCINOGENICITY - Category 1A  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
HNOC - Defatting irritant

### Composition/information on ingredients

## Section 15. Regulatory information

Name	%	Classification
alc , not containing asbestiform fibres	≥10 - ≤20	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
n-butyl acetate	≥10 - ≤20	FLAMMABLE LIQUIDS - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
antimony nickel titanium oxide yellow	≥10 - ≤20	EYE IRRITATION - Category 2A
4-methylpentan-2-one	≥5.0 - ≤10	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
xylene	≥5.0 - ≤10	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1
calcium chromate	≥1.0 - ≤5.0	ACUTE TOXICITY (oral) - Category 4 CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
butan-1-ol	≥1.0 - ≤4.5	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
titanium dioxide	≥1.0 - ≤5.0	CARCINOGENICITY - Category 2
butanone	≥1.0 - ≤4.2	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
ethylbenzene	≤1.9	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
crystalline silica, respirable powder (<10 microns)	<1.0	CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED



## Section 15. Regulatory information

EXPOSURE) - Category 1

### SARA 313

Supplier notification	Chemical name	CAS number	Concentration
	antimony nickel titanium oxide yellow	8007-18-9	7 - 13
	4-methylpentan-2-one	108-10-1	5 - 10
	xylene	1330-20-7	5 - 10
	calcium chromate	13765-19-0	1 - 5
	butan-1-ol	71-36-3	1 - 5
	ethylbenzene	100-41-4	0.5 - 1.5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### California Prop. 65

 **WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health : 3 \* Flammability : 3 Physical hazards : 0

(\*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

### National Fire Protection Association (U.S.A.)

Health : 3 Flammability : 3 Instability : 0

Date of previous issue : 6/22/2022

Organization that prepared the SDS : EHS

Key to abbreviations :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- SGG = Segregation Group
- UN = United Nations

 Indicates information that has changed from previously issued version.

### Disclaimer

## Section 16. Other information

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*





Yellow Topcoat

# SAFETY DATA SHEET

Issuing Date: 31-Jan-2017

Revision Date: 31-Jan-2017

Revision Number: 1

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: AXPG-6-Y26 Q2

Product Name: H-SOLIDS TOPC EXT. "GLOSS YELLOW BAC 302" BMS 1060 TYI

Hentzen Coatings, Inc.  
6937 West Mill Road, Milwaukee, WI 53218-1225

Company Phone Number: 1-414-353-4200

Emergency telephone number ChemTrec 1-800-424-9300

Recommended use of the chemical and restrictions on use

Industrial paint (Paint or Paint-Related), Restricted to professional users

## 2. HAZARDS IDENTIFICATION

### Classification

### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2
Flammable Liquids	Category 2

### Label Elements

### Emergency Overview

#### DANGER

#### Hazard Statements

Harmful if swallowed

harmful if inhaled

Causes serious eye irritation

May cause an allergic skin reaction

May cause cancer

Suspected of damaging fertility or the unborn child

Highly flammable liquid and vapor



Appearance Opaque

Physical state Liquid

Odor Solvent

### Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product



Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Contaminated work clothing should not be allowed out of the workplace  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/Bond container and receiving equipment  
Use explosion-proof electrical/ ventilating/ lighting/ equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Wear protective gloves/protective clothing/eye protection/face protection

#### **Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth  
In case of fire: Use CO2, dry chemical, or foam for extinction

#### **Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool  
Store in accordance with local regulations

#### **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

#### **Hazards not otherwise classified (HNOC)**

##### **Other information**

- Toxic to aquatic life

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **Contains a known or suspected carcinogen**

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
STRONTIUM CHROMATE	7789-06-2	10% - 20%	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO3 applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect
TITANIUM DIOXIDE	13463-67-7	5% - 10%	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust
ACETONE	67-64-1	5% - 10%	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>
TALC	14807-96-6	5% - 10%	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>

CYCLOHEXANONE	108-94-1	1% - 5%	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLENE(PURE)	1330-20-7	1% - 5%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	14808-60-7	1% - 5%	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction
METHYL ISOBUTYL KETONE	108-10-1	1% - 5%	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>
TOLUENE	108-88-3	0% - 1%	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm
ETHYLBENZENE	100-41-4	0% - 1%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>

#### 4. FIRST AID MEASURES

##### First Aid Measures

<b>General advice</b>	Immediate medical attention is required.
<b>Eye Contact</b>	Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. Call a physician immediately.
<b>Skin Contact</b>	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Inhalation</b>	Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Immediate medical attention is required. If not breathing, give artificial respiration.
<b>Ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required. Avoid contact with eyes, skin and clothing.
<b>Most important symptoms and effects, both acute and delayed</b>	
<b>Most Important Symptoms and Effects</b>	No information available.
<b>Indication of any immediate medical attention and special treatment needed</b>	
<b>Notes to physician</b>	May cause sensitization of susceptible persons.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

##### Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe

fumes. May cause sensitization by inhalation and skin contact. Extremely flammable.

**Explosion Data**

**Sensitivity to Mechanical Impact** no data available.

**Sensitivity to Static Discharge** Yes.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions**

Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Avoid breathing vapors or mists. Ventilate the area.

**Environmental Precautions**

**Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

**Methods and materials for containment and cleaning up**

**Methods for Containment**

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for Cleaning Up**

Cover liquid spill with sand, earth or other noncombustible absorbent material. Sweep up and shovel into suitable containers for disposal. Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on safe handling**

Avoid contact with eyes, skin and clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe vapor or mist. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from heat, sparks and flame.

**Incompatible Products**

None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH	OSHA	NIOSH IDLH
STRONTIUM CHROMATE 7789-06-2	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO <sub>3</sub> applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect	IDLH: 15 mg/m <sup>3</sup> Cr(VI) TWA: 0.0002 mg/m <sup>3</sup> Cr
CALCIUM METASILICATE	TWA: 1 mg/m <sup>3</sup> inhalable particulate	N/A	

13983-17-0	matter, particulate matter containing no asbestos and <1% crystalline silica		
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
ACETONE 67-64-1	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m <sup>3</sup>
TALC 14807-96-6	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit	IDLH: 1000 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup> containing no Asbestos and <1% Quartz respirable dust
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT 66402-68-4	STEL: 10 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr TWA: 0.02 mg/m <sup>3</sup> Mn respirable particulate matter TWA: 0.1 mg/m <sup>3</sup> Mn inhalable particulate matter	TWA: 5 mg/m <sup>3</sup> Zr	IDLH: 25 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> except Zirconium tetrachloride Zr STEL: 10 mg/m <sup>3</sup> Zr
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
QUARTZ CRYSTALLINE SILICA 14808-60-7	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction	IDLH: 50 mg/m <sup>3</sup> respirable dust TWA: 0.05 mg/m <sup>3</sup> respirable dust
METHYL ISOBUTYL KETONE 108-10-1	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m <sup>3</sup> STEL: 75 ppm STEL: 300 mg/m <sup>3</sup>
TOLUENE 108-88-3	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

#### Exposure controls

##### Engineering Measures

Showers  
Eyewash stations  
Ventilation systems.

##### Individual protection measures, such as personal protective equipment

##### Eye/Face Protection

Use personal protective equipment as required.

##### Skin and Body Protection

Chemical resistant apron.



#### Respiratory Protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

#### Hygiene Measures

Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	Appearance	Opaque
Odor	Solvent.	Odor Threshold	No data available
pH	No data available	Flash Point	-4 °F / -20 °C
Decomposition temperature	No data available	Boiling Point	133 °F / 56 °C
Melting Point / Melting Range	No data available	Freezing Point	No data available
Vapor Pressure @20°C (kPa)	No data available	Partition coefficient:	No data available
Vapor Density	No data available	Density	No data available
Bulk density	No data available	Specific Gravity	1.46
Evaporation Rate	No data available	Water solubility	No data available
Dynamic viscosity	No data available	Weight per Gallon (lbs/gal):	12.14
		Flammability Limits in Air	
		Upper	2.51 %
		Lower	0.41 %

### 10. STABILITY AND REACTIVITY

#### Reactivity

No data available

#### Chemical stability

Stable under recommended storage conditions.

#### Conditions to Avoid

Extremes of temperature and direct sunlight.

#### Incompatible Materials

None known based on information supplied.

#### Hazardous Decomposition Products

None known based on information supplied.

### 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Product Information	The product has not been tested
Inhalation	There is no data for this product.
Eye Contact	There is no data for this product.
Skin Contact	There is no data for this product.
Ingestion	There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
STRONTIUM CHROMATE 7789-06-2	= 811 mg/kg ( Rat )	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	> 10000 mg/kg ( Rat )	N/A	N/A
ACETONE 67-64-1	= 5800 mg/kg ( Rat )	> 15700 mg/kg ( Rabbit )	= 50100 mg/m <sup>3</sup> ( Rat ) 8 h

METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h
METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
XYLENE(PURE) 1330-20-7	= 3500 mg/kg ( Rat )	> 4350 mg/kg ( Rabbit )	= 29.08 mg/L ( Rat ) 4 h
QUARTZ CRYSTALLINE SILICA 14808-60-7	= 500 mg/kg ( Rat )	N/A	N/A
METHYL ISOBUTYL KETONE 108-10-1	= 2080 mg/kg ( Rat )	= 3000 mg/kg ( Rabbit )	= 8.2 mg/L ( Rat ) 4 h
TOLUENE 108-88-3	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h
ETHYLBENZENE 100-41-4	= 3500 mg/kg ( Rat )	= 15400 mg/kg ( Rabbit )	= 17.4 mg/L ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h

#### Information on toxicological effects

**Symptoms** No information available.

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Sensitization** No information available.

**MUTAGENIC EFFECTS** No information available.

**Carcinogenicity** This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
STRONTIUM CHROMATE 7789-06-2	A2	Group 1	Known	X
CALCIUM METASILICATE 13983-17-0	N/A	Group 3	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
TALC 14807-96-6	N/A	Group 2B Group 3	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
QUARTZ CRYSTALLINE SILICA 14808-60-7	A2	Group 1	Known	X
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	N/A	X
TOLUENE 108-88-3	N/A	Group 3	N/A	N/A
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A

#### Legend:

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**NTP (National Toxicology Program)**

Known - Known Carcinogen

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

Reproductive Toxicity	No information available.
Specific target organ systemic toxicity (single exposure)	No information available.
Specific target organ systemic toxicity (repeated exposure)	No information available.
Chronic Toxicity	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.
Target Organ Effects	Blood, Central nervous system (CNS), Central Vascular System (CVS), Eyes, Kidney, Liver, Lungs, Peripheral Nervous System (PNS), Respiratory system, Skin.
Aspiration hazard	No information available.

#### Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	1603 mg/kg
ATEmix (dermal)	6233 mg/kg
ATEmix (inhalation-dust/mist)	5 mg/l
Oral LD50	2714 mg/kg (rat) Estimated
Dermal LD50	13141 mg/kg (rat) Estimated

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
ACETONE 67-64-1	N/A	4.74 - 6.33: 96 h Oncorhynchus mykiss mL/L LC50 6210 - 8120: 96 h Pimephales promelas mg/L LC50 static 8300: 96 h Lepomis macrochirus mg/L LC50	10294 - 17704: 48 h Daphnia magna mg/L EC50 Static 12600 - 12700: 48 h Daphnia magna mg/L EC50
TALC 14807-96-6	N/A	100: 96 h Brachydanio rerio g/L LC50 semi-static	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
XYLENE(PURE) 1330-20-7	N/A	13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50	0.6: 48 h Gammarus lacustris mg/L LC50 3.82: 48 h water flea mg/L EC50
METHYL ISOBUTYL KETONE 108-10-1	400: 96 h Pseudokirchneriella subcapitata mg/L EC50	496 - 514: 96 h Pimephales promelas mg/L LC50 flow-through	170: 48 h Daphnia magna mg/L EC50
TOLUENE 108-88-3	12.5: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 433: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 15.0: 96 h Lepomis macrochirus mg/L LC50 static 14.1 - 17.16: 96 h Oncorhynchus mykiss mg/L LC50 static 15.22 - 19.05: 96	5.46 - 9.83: 48 h Daphnia magna mg/L EC50 Static 11.5: 48 h Daphnia magna mg/L EC50

		h Pimephales promelas mg/L LC50 flow-through 5.89 - 7.81: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 50.87 - 70.34: 96 h Poecilia reticulata mg/L LC50 static 12.6: 96 h Pimephales promelas mg/L LC50 static 28.2: 96 h Poecilia reticulata mg/L LC50 semi-static 5.8: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 54: 96 h Oryzias latipes mg/L LC50 static	
ETHYLBENZENE 100-41-4	1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 2.6 - 11.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 4.6: 72 h Pseudokirchneriella subcapitata mg/L EC50 438: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static 7.55 - 11: 96 h Pimephales promelas mg/L LC50 flow-through 9.1 - 15.6: 96 h Pimephales promelas mg/L LC50 static 32: 96 h Lepomis macrochirus mg/L LC50 static 4.2: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 9.6: 96 h Poecilia reticulata mg/L LC50 static	1.8 - 2.4: 48 h Daphnia magna mg/L EC50
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	N/A

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
ACETONE 67-64-1	-0.24
METHYL AMYL KETONE 110-43-0	1.98
CYCLOHEXANONE 108-94-1	0.86
METHYL AMYL KETONE 110-43-0	1.98
XYLENE(PURE) 1330-20-7	3.15
METHYL ISOBUTYL KETONE 108-10-1	1.19
TOLUENE 108-88-3	2.7
ETHYLBENZENE 100-41-4	3.2

**Other adverse effects**

No information available

### 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Waste treatment methods**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**US EPA Waste Number**

D001

Chemical Name	RCRA - Basis for Listing	RCRA - D Series Wastes
ACETONE 67-64-1	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A
XYLENE(PURE)	Included in waste stream: F039	N/A

1330-20-7		
METHYL ISOBUTYL KETONE 108-10-1	Included in waste stream: F039	N/A
TOLUENE 108-88-3	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151	N/A
ETHYLBENZENE 100-41-4	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
TOLUENE 108-88-3	N/A	N/A	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	N/A

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
STRONTIUM CHROMATE 7789-06-2	Toxic Corrosive Ignitable
ACETONE 67-64-1	Ignitable
SILICEOUS EXTENDER PIGMENT 66402-68-4	Toxic
XYLENE(PURE) 1330-20-7	Toxic Ignitable
TOLUENE 108-88-3	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable

#### 14. TRANSPORT INFORMATION

##### DOT

UN-No UN1263  
Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Special Provisions 149, B52, IB2, T4, TP1, TP8, TP28  
Description UN1263, Paint, Marine Pollutant, 3, II, RQ  
Emergency Response Guide Number 128

##### TDG

UN-No UN1263  
Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Description UN1263, Paint, Marine Pollutant, 3, II

**MEX**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

**ICAO**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

**IATA**

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

**IMDG/IMO**

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

**RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, Environmentally Hazardous, 3, II

**ADR/RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, Environmentally Hazardous, 3, II, (D/E)
ADR/RID-Labels	3

**ADN**

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, Environmentally Hazardous, 3, II
Hazard Labels	3
Limited Quantity (LQ)	5 L
Ventilation	VE01

**15. REGULATORY INFORMATION**

**International Inventories**

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List  
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
 ENCS - Japan Existing and New Chemical Substances  
 IECSC - China Inventory of Existing Chemical Substances  
 KECL - Korean Existing and Evaluated Chemical Substances  
 PICCS - Philippines Inventory of Chemicals and Chemical Substances  
 AICS - Australian Inventory of Chemical Substances

### US Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
STRONTIUM CHROMATE	7789-06-2	0.1
SILICEOUS EXTENDER PIGMENT	66402-68-4	1.0
XYLENE(PURE)	1330-20-7	1.0
METHYL ISOBUTYL KETONE	108-10-1	1.0
ETHYLBENZENE	100-41-4	0.1

#### SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

#### CAA (Clean Air Act)

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
STRONTIUM CHROMATE	7789-06-2	Present
XYLENE(PURE)	1330-20-7	Present
METHYL ISOBUTYL KETONE	108-10-1	Present
TOLUENE	108-88-3	Present
ETHYLBENZENE	100-41-4	Present

#### Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
STRONTIUM CHROMATE	10 lb	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	N/A	N/A
XYLENE(PURE)	100 lb	N/A	N/A	X
TOLUENE	1000 lb	X	X	X
ETHYLBENZENE	1000 lb	X	X	X

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
STRONTIUM CHROMATE	10 lb	N/A	RQ 10 lb final RQ RQ 4.54 kg final RQ
ACETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
METHYL ISOBUTYL KETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
TOLUENE	1000 lb 1 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ RQ 1 lb final RQ RQ 0.454 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

### State Regulations

#### California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
STRONTIUM CHROMATE	7789-06-2	Carcinogen Developmental Female Reproductive Male Reproductive
TITANIUM DIOXIDE	13463-67-7	Carcinogen
QUARTZ CRYSTALLINE SILICA	14808-60-7	Carcinogen
METHYL ISOBUTYL KETONE	108-10-1	Carcinogen Developmental
TOLUENE	108-88-3	Developmental
ETHYLBENZENE	100-41-4	Carcinogen

### U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
STRONTIUM CHROMATE	X	X	X	X	X
TITANIUM DIOXIDE	X	X	X	N/A	X
ACETONE	X	X	X	N/A	N/A
TALC	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	N/A
CYCLOHEXANONE	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	X	X	N/A
XYLENE(PURE)	X	X	X	X	X
QUARTZ CRYSTALLINE SILICA	X	X	X	X	X
METHYL ISOBUTYL KETONE	X	X	X	X	X
TOLUENE	X	X	X	X	X
ETHYLBENZENE	X	X	X	X	X

### International Regulations

Mexico - Grade

Serious risk, Grade 3



Chemical Name	Carcinogenic Status	Exposure Limits
STRONTIUM CHROMATE	A1	Mexico: TWA 0.01 mg/m <sup>3</sup> Mexico: TWA 0.5 mg/m <sup>3</sup>
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
ACETONE	N/A	Mexico: TWA 1000 ppm Mexico: TWA 2400 mg/m <sup>3</sup> Mexico: STEL 1260 ppm Mexico: STEL 3000 mg/m <sup>3</sup>
TALC	N/A	Mexico: TWA 2 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT	N/A	Mexico: TWA 5 mg/m <sup>3</sup> Mexico: TWA 0.2 mg/m <sup>3</sup> Mexico: STEL 10 mg/m <sup>3</sup>
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 150 ppm Mexico: STEL 655 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	N/A	Mexico: TWA 0.1 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 205 mg/m <sup>3</sup> Mexico: STEL 75 ppm Mexico: STEL 307 mg/m <sup>3</sup>
TOLUENE	N/A	Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>
ETHYLBENZENE	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 125 ppm Mexico: STEL 545 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>

## 16. OTHER INFORMATION

**NFPA**

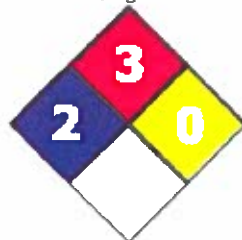
Health Hazard 2

Flammability 3

Instability 0

Physical and Chemical Hazards -

NFPA Rating



**HMIS**

Health Hazard 1 \*

Flammability 3

Physical Hazard 0

Personal protection X

Chronic Hazard Star Legend

\* Chronic Health Hazard

Issuing Date: 31-Jan-2017  
Revision Date: 31-Jan-2017  
Revision Note  
No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

end





# SAFETY DATA SHEET

Issuing Date: 31-Jan-2017

Revision Date: 31-Jan-2017

Revision Number: 1

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: AXPB-34 Q

Product Name: CATALYST FOR H-SOLIDS PG-6-SERIES 1  
QUART

Hentzen Coatings, Inc.  
6937 West Mill Road, Milwaukee, WI 53218-1225

Company Phone Number: 1-414-353-4200

Recommended use of the chemical and restrictions on use

Emergency telephone number ChemTrec 1-800-424-9300  
Industrial paint (Paint or Paint-Related), Restricted to  
professional users

## 2. HAZARDS IDENTIFICATION

### Classification

#### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2
Flammable Liquids	Category 2

### Label Elements

#### Emergency Overview

#### DANGER

#### Hazard Statements

Harmful if swallowed  
harmful if inhaled  
Causes serious eye irritation  
May cause an allergic skin reaction  
May cause cancer  
Suspected of damaging fertility or the unborn child  
Highly flammable liquid and vapor



Appearance Opaque

Physical state Liquid

Odor Solvent

#### Precautionary Statements - Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product



Avoid breathing dust/fume/gas/mist/vapors/spray  
 Use only outdoors or in a well-ventilated area  
 Contaminated work clothing should not be allowed out of the workplace  
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 Keep container tightly closed  
 Ground/Bond container and receiving equipment  
 Use explosion-proof electrical/ ventilating/ lighting/ equipment  
 Use only non-sparking tools  
 Take precautionary measures against static discharge  
 Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 If eye irritation persists: Get medical advice/attention  
 If skin irritation or rash occurs: Get medical advice/attention  
 Wash contaminated clothing before reuse  
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
 Rinse mouth  
 In case of fire: Use CO2, dry chemical, or foam for extinction

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool  
 Store in accordance with local regulations

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)****Other information**

- Toxic to aquatic life

<b>3. COMPOSITION/INFORMATION ON INGREDIENTS</b>
--

**Contains a known or suspected carcinogen**

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
STRONTIUM CHROMATE	7789-06-2	10% - 20%	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO <sub>3</sub> applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect
TITANIUM DIOXIDE	13463-67-7	5% - 10%	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust
ACETONE	67-64-1	5% - 10%	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>
TALC	14807-96-6	5% - 10%	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>

CYCLOHEXANONE	108-94-1	1% - 5%	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLENE(PURE)	1330-20-7	1% - 5%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	14808-60-7	1% - 5%	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction
METHYL ISOBUTYL KETONE	108-10-1	1% - 5%	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>
TOLUENE	108-88-3	0% - 1%	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm
ETHYLBENZENE	100-41-4	0% - 1%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>

#### 4. FIRST AID MEASURES

##### First Aid Measures

<b>General advice</b>	Immediate medical attention is required.
<b>Eye Contact</b>	Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. Call a physician immediately.
<b>Skin Contact</b>	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Inhalation</b>	Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Immediate medical attention is required. If not breathing, give artificial respiration.
<b>Ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required. Avoid contact with eyes, skin and clothing.
<b>Most important symptoms and effects, both acute and delayed</b>	
<b>Most Important Symptoms and Effects</b>	No information available.
<b>Indication of any immediate medical attention and special treatment needed</b>	
<b>Notes to physician</b>	May cause sensitization of susceptible persons.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

##### Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe

fumes. May cause sensitization by inhalation and skin contact. Extremely flammable.

**Explosion Data**

**Sensitivity to Mechanical Impact** no data available.

**Sensitivity to Static Discharge** Yes.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures****Personal Precautions**

Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Avoid breathing vapors or mists. Ventilate the area.

**Environmental Precautions****Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

**Methods and materials for containment and cleaning up****Methods for Containment**

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for Cleaning Up**

Cover liquid spill with sand, earth or other noncombustible absorbent material. Sweep up and shovel into suitable containers for disposal. Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

**Precautions for safe handling****Advice on safe handling**

Avoid contact with eyes, skin and clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe vapor or mist. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

**Conditions for safe storage, including any incompatibilities****Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from heat, sparks and flame.

**Incompatible Products**

None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters****Exposure Guidelines**

Chemical Name	ACGIH	OSHA	NIOSH IDLH
STRONTIUM CHROMATE 7789-06-2	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO <sub>3</sub> applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect	IDLH: 15 mg/m <sup>3</sup> Cr(VI) TWA: 0.0002 mg/m <sup>3</sup> Cr
CALCIUM METASILICATE	TWA: 1 mg/m <sup>3</sup> inhalable particulate	N/A	

13983-17-0	matter, particulate matter containing no asbestos and <1% crystalline silica		
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
ACETONE 67-64-1	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m <sup>3</sup>
TALC 14807-96-6	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit	IDLH: 1000 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup> containing no Asbestos and <1% Quartz respirable dust
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT 66402-68-4	STEL: 10 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr TWA: 0.02 mg/m <sup>3</sup> Mn respirable particulate matter TWA: 0.1 mg/m <sup>3</sup> Mn inhalable particulate matter	TWA: 5 mg/m <sup>3</sup> Zr	IDLH: 25 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> except Zirconium tetrachloride Zr STEL: 10 mg/m <sup>3</sup> Zr
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
QUARTZ CRYSTALLINE SILICA 14808-60-7	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction	IDLH: 50 mg/m <sup>3</sup> respirable dust TWA: 0.05 mg/m <sup>3</sup> respirable dust
METHYL ISOBUTYL KETONE 108-10-1	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m <sup>3</sup> STEL: 75 ppm STEL: 300 mg/m <sup>3</sup>
TOLUENE 108-88-3	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

#### Exposure controls

##### Engineering Measures

Showers  
Eyewash stations  
Ventilation systems.

#### Individual protection measures, such as personal protective equipment

##### Eye/Face Protection

Use personal protective equipment as required.

##### Skin and Body Protection

Chemical resistant apron.



**Respiratory Protection**

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene Measures**

Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state</b>	Liquid	<b>Appearance</b>	Opaque
<b>Odor</b>	Solvent.	<b>Odor Threshold</b>	No data available
<b>pH</b>	No data available	<b>Flash Point</b>	-4 °F / -20 °C
<b>Decomposition temperature</b>	No data available	<b>Boiling Point</b>	133 °F / 56 °C
<b>Melting Point / Melting Range</b>	No data available	<b>Freezing Point</b>	No data available
<b>Vapor Pressure @20°C (kPa)</b>	No data available	<b>Partition coefficient:</b>	No data available
<b>Vapor Density</b>	No data available	<b>Density</b>	No data available
<b>Bulk density</b>	No data available	<b>Specific Gravity</b>	1.46
<b>Evaporation Rate</b>	No data available	<b>Water solubility</b>	No data available
<b>Dynamic viscosity</b>	No data available	<b>Weight per Gallon (lbs/gal):</b>	12.14
		<b>Flammability Limits in Air</b>	
		Upper	2.51 %
		Lower	0.41 %

## 10. STABILITY AND REACTIVITY

**Reactivity**

No data available

**Chemical stability**

Stable under recommended storage conditions.

**Conditions to Avoid**

Extremes of temperature and direct sunlight.

**Incompatible Materials**

None known based on information supplied.

**Hazardous Decomposition Products**

None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

<b>Product Information</b>	The product has not been tested
<b>Inhalation</b>	There is no data for this product.
<b>Eye Contact</b>	There is no data for this product.
<b>Skin Contact</b>	There is no data for this product.
<b>Ingestion</b>	There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
STRONTIUM CHROMATE 7789-06-2	= 811 mg/kg ( Rat )	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	> 10000 mg/kg ( Rat )	N/A	N/A
ACETONE 67-64-1	= 5800 mg/kg ( Rat )	> 15700 mg/kg ( Rabbit )	= 50100 mg/m <sup>3</sup> ( Rat ) 8 h

METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h
METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
XYLENE(PURE) 1330-20-7	= 3500 mg/kg ( Rat )	> 4350 mg/kg ( Rabbit )	= 29.08 mg/L ( Rat ) 4 h
QUARTZ CRYSTALLINE SILICA 14808-60-7	= 500 mg/kg ( Rat )	N/A	N/A
METHYL ISOBUTYL KETONE 108-10-1	= 2080 mg/kg ( Rat )	= 3000 mg/kg ( Rabbit )	= 8.2 mg/L ( Rat ) 4 h
TOLUENE 108-88-3	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h
ETHYLBENZENE 100-41-4	= 3500 mg/kg ( Rat )	= 15400 mg/kg ( Rabbit )	= 17.4 mg/L ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h

**Information on toxicological effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization** No information available.

**MUTAGENIC EFFECTS** No information available.

**Carcinogenicity** This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
STRONTIUM CHROMATE 7789-06-2	A2	Group 1	Known	X
CALCIUM METASILICATE 13983-17-0	N/A	Group 3	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
TALC 14807-96-6	N/A	Group 2B Group 3	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
QUARTZ CRYSTALLINE SILICA 14808-60-7	A2	Group 1	Known	X
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	N/A	X
TOLUENE 108-88-3	N/A	Group 3	N/A	N/A
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A

**Legend:**

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**NTP (National Toxicology Program)**

Known - Known Carcinogen

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

Reproductive Toxicity	No information available.
Specific target organ systemic toxicity (single exposure)	No information available.
Specific target organ systemic toxicity (repeated exposure)	No information available.
Chronic Toxicity	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.
Target Organ Effects	Blood, Central nervous system (CNS), Central Vascular System (CVS), Eyes, Kidney, Liver, Lungs, Peripheral Nervous System (PNS), Respiratory system, Skin.
Aspiration hazard	No information available.

**Numerical measures of toxicity - Product Information**

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	1603 mg/kg
ATEmix (dermal)	6233 mg/kg
ATEmix (inhalation-dust/mist)	5 mg/l
Oral LD50	2714 mg/kg (rat) Estimated
Dermal LD50	13141 mg/kg (rat) Estimated

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
ACETONE 67-64-1	N/A	4.74 - 6.33: 96 h Oncorhynchus mykiss mL/L LC50 6210 - 8120: 96 h Pimephales promelas mg/L LC50 static 8300: 96 h Lepomis macrochirus mg/L LC50	10294 - 17704: 48 h Daphnia magna mg/L EC50 Static 12600 - 12700: 48 h Daphnia magna mg/L EC50
TALC 14807-96-6	N/A	100: 96 h Brachydanio rerio g/L LC50 semi-static	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
XYLENE(PURE) 1330-20-7	N/A	13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50	0.6: 48 h Gammarus lacustris mg/L LC50 3.82: 48 h water flea mg/L EC50
METHYL ISOBUTYL KETONE 108-10-1	400: 96 h Pseudokirchneriella subcapitata mg/L EC50	496 - 514: 96 h Pimephales promelas mg/L LC50 flow-through	170: 48 h Daphnia magna mg/L EC50
TOLUENE 108-88-3	12.5: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 433: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 15.0: 96 h Lepomis macrochirus mg/L LC50 static 14.1 - 17.16: 96 h Oncorhynchus mykiss mg/L LC50 static 15.22 - 19.05: 96	5.46 - 9.83: 48 h Daphnia magna mg/L EC50 Static 11.5: 48 h Daphnia magna mg/L EC50

		h Pimephales promelas mg/L LC50 flow-through 5.89 - 7.81: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 50.87 - 70.34: 96 h Poecilia reticulata mg/L LC50 static 12.6: 96 h Pimephales promelas mg/L LC50 static 28.2: 96 h Poecilia reticulata mg/L LC50 semi-static 5.8: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 54: 96 h Oryzias latipes mg/L LC50 static	
ETHYLBENZENE 100-41-4	1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 2.6 - 11.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 4.6: 72 h Pseudokirchneriella subcapitata mg/L EC50 438: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static 7.55 - 11: 96 h Pimephales promelas mg/L LC50 flow-through 9.1 - 15.6: 96 h Pimephales promelas mg/L LC50 static 32: 96 h Lepomis macrochirus mg/L LC50 static 4.2: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 9.6: 96 h Poecilia reticulata mg/L LC50 static	1.8 - 2.4: 48 h Daphnia magna mg/L EC50
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	N/A

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
ACETONE 67-64-1	-0.24
METHYL AMYL KETONE 110-43-0	1.98
CYCLOHEXANONE 108-94-1	0.86
METHYL AMYL KETONE 110-43-0	1.98
XYLENE(PURE) 1330-20-7	3.15
METHYL ISOBUTYL KETONE 108-10-1	1.19
TOLUENE 108-88-3	2.7
ETHYLBENZENE 100-41-4	3.2

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods****Waste treatment methods**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**US EPA Waste Number**

D001

Chemical Name	RCRA - Basis for Listing	RCRA - D Series Wastes
ACETONE 67-64-1	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A
XYLENE(PURE)	Included in waste stream: F039	N/A

1330-20-7		
METHYL ISOBUTYL KETONE 108-10-1	Included in waste stream: F039	N/A
TOLUENE 108-88-3	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151	N/A
ETHYLBENZENE 100-41-4	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
TOLUENE 108-88-3	N/A	N/A	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	N/A

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
STRONTIUM CHROMATE 7789-06-2	Toxic Corrosive Ignitable
ACETONE 67-64-1	Ignitable
SILICEOUS EXTENDER PIGMENT 66402-68-4	Toxic
XYLENE(PURE) 1330-20-7	Toxic Ignitable
TOLUENE 108-88-3	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable

#### 14. TRANSPORT INFORMATION

##### DOT

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	149, B52, IB2, T4, TP1, TP8, TP28
Description	UN1263, Paint, Marine Pollutant, 3, II, RQ
Emergency Response Guide Number	128

##### TDG

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, Marine Pollutant, 3, II

**MEX**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

**ICAO**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

**IATA**

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

**IMDG/IMO**

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

**RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, Environmentally Hazardous, 3, II

**ADR/RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, Environmentally Hazardous, 3, II, (D/E)
ADR/RID-Labels	3

**ADN**

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, Environmentally Hazardous, 3, II
Hazard Labels	3
Limited Quantity (LQ)	5 L
Ventilation	VE01

**15. REGULATORY INFORMATION****International Inventories**

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

### US Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
STRONTIUM CHROMATE	7789-06-2	0.1
SILICEOUS EXTENDER PIGMENT	66402-68-4	1.0
XYLENE(PURE)	1330-20-7	1.0
METHYL ISOBUTYL KETONE	108-10-1	1.0
ETHYLBENZENE	100-41-4	0.1

#### SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

#### CAA (Clean Air Act)

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
STRONTIUM CHROMATE	7789-06-2	Present
XYLENE(PURE)	1330-20-7	Present
METHYL ISOBUTYL KETONE	108-10-1	Present
TOLUENE	108-88-3	Present
ETHYLBENZENE	100-41-4	Present

#### Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
STRONTIUM CHROMATE	10 lb	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	N/A	N/A
XYLENE(PURE)	100 lb	N/A	N/A	X
TOLUENE	1000 lb	X	X	X
ETHYLBENZENE	1000 lb	X	X	X

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
STRONTIUM CHROMATE	10 lb	N/A	RQ 10 lb final RQ RQ 4.54 kg final RQ
ACETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
METHYL ISOBUTYL KETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
TOLUENE	1000 lb 1 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ RQ 1 lb final RQ RQ 0.454 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

### State Regulations

#### California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
STRONTIUM CHROMATE	7789-06-2	Carcinogen Developmental Female Reproductive Male Reproductive
TITANIUM DIOXIDE	13463-67-7	Carcinogen
QUARTZ CRYSTALLINE SILICA	14808-60-7	Carcinogen
METHYL ISOBUTYL KETONE	108-10-1	Carcinogen Developmental
TOLUENE	108-88-3	Developmental
ETHYLBENZENE	100-41-4	Carcinogen

### U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
STRONTIUM CHROMATE	X	X	X	X	X
TITANIUM DIOXIDE	X	X	X	N/A	X
ACETONE	X	X	X	N/A	N/A
TALC	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	N/A
CYCLOHEXANONE	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	X	X	N/A
XYLENE(PURE)	X	X	X	X	X
QUARTZ CRYSTALLINE SILICA	X	X	X	X	X
METHYL ISOBUTYL KETONE	X	X	X	X	X
TOLUENE	X	X	X	X	X
ETHYLBENZENE	X	X	X	X	X

### International Regulations

Mexico - Grade

Serious risk, Grade 3



Chemical Name	Carcinogenic Status	Exposure Limits
STRONTIUM CHROMATE	A1	Mexico: TWA 0.01 mg/m <sup>3</sup> Mexico: TWA 0.5 mg/m <sup>3</sup>
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
ACETONE	N/A	Mexico: TWA 1000 ppm Mexico: TWA 2400 mg/m <sup>3</sup> Mexico: STEL 1260 ppm Mexico: STEL 3000 mg/m <sup>3</sup>
TALC	N/A	Mexico: TWA 2 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT	N/A	Mexico: TWA 5 mg/m <sup>3</sup> Mexico: TWA 0.2 mg/m <sup>3</sup> Mexico: STEL 10 mg/m <sup>3</sup>
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 150 ppm Mexico: STEL 655 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	N/A	Mexico: TWA 0.1 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 205 mg/m <sup>3</sup> Mexico: STEL 75 ppm Mexico: STEL 307 mg/m <sup>3</sup>
TOLUENE	N/A	Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>
ETHYLBENZENE	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 125 ppm Mexico: STEL 545 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>

## 16. OTHER INFORMATION

NFPA

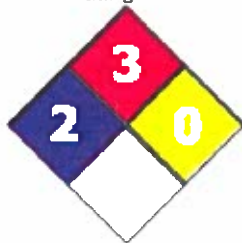
Health Hazard 2

Flammability 3

Instability 0

Physical and Chemical Hazards -

NFPA Rating



HMIS

Health Hazard 1 \*

Flammability 3

Physical Hazard 0

Personal protection X

Chronic Hazard Star Legend

\* Chronic Health Hazard

Issuing Date: 31-Jan-2017  
Revision Date: 31-Jan-2017  
Revision Note  
No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

end



ECL-G-101

757 Gray Topcoat

Akzo Nobel Coatings, Inc.

AkzoNobel



## SAFETY DATA SHEET

### Eclipse High Solids Polyurethane Enamel ECL-G-101

#### Section 1. Identification

GHS product identifier : Eclipse High Solids Polyurethane Enamel ECL-G-101  
Other means of identification : ECL-G-101\_Gray BAC 707 #715004

Relevant identified uses of the substance or mixture and uses advised against  
: FOR INDUSTRIAL USE ONLY

Supplier/Manufacturer : Akzo Nobel Coatings, Inc.  
1 East Water Street  
Waukegan, IL 60085  
USA  
Tel. 1 847 623 4200  
Email: customer.  
service@akzonobel.com

Canadian Supplier : Akzo Nobel Coatings Ltd.  
110 Woodbine Downs Blvd.  
Unit #4 Etobicoke, Ontario  
Canada M9W 5S6  
+1 (800) 618-1010

Emergency telephone number : CHEMTREC +1 (800) 424-9300 (Inside the US)  
CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

Date of issue / Date of revision : 9 June 2021

Safety Data Sheet Version : 2.27

Date of printing : 9 June 2021

Akzo Nobel Coatings Inc. encourages and expects you to read and understand this entire MSDS, as there is important information throughout the document. Further, Akzo Nobel Coatings Inc. expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information contained in this MSDS and any other information regarding hazards and safety; 2) Furnish this same information to each of its customers for the product; 3) Request its customers to notify their employees, customers, and other users of the product of this information; and 4) Notify its employees, agents, contractors, and others that the precautions identified for this product and any other products with which mixtures may be created are transferable and cumulative to the mixture.

#### Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3  
CARCINOGENICITY - Category 2

#### GHS label elements

For additional information call Akzo Nobel at (847) 625-4200

To request an updated SDS please visit [http://www.formstack.com/forms/AkzoNobel-document\\_request\\_form](http://www.formstack.com/forms/AkzoNobel-document_request_form)

## Section 2. Hazards identification

### Hazard pictograms



### Signal word

: Warning

### Hazard statements

: Flammable liquid and vapor.  
Suspected of causing cancer.

### Precautionary statements

#### Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Keep container tightly closed.

#### Response

: IF exposed or concerned: Get medical attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

#### Storage

: Store locked up. Store in a well-ventilated place. Keep cool.

#### Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

### Hazards not otherwise classified

: None known.

## Section 3. Composition/information on ingredients

### Substance/mixture

: Mixture

Ingredient name	%	CAS number
heptan-2-one	20 - 25	110-43-0
titanium dioxide	20 - 25	13463-67-7
aluminium hydroxide	15 - 20	21645-51-2
n-butyl acetate	1 - 5	123-86-4
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	1 - 5	41556-26-7
silicon dioxide	1 - 5	7631-86-9
Solvent naphtha (petroleum), light arom.	0 - 1	64742-95-6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
metal oxide/oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flames, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.



## Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
heptan-2-one	ACGIH TLV (United States, 3/2016). TWA: 233 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours. NIOSH REL (United States, 10/2016). TWA: 465 mg/m <sup>3</sup> 10 hours. TWA: 100 ppm 10 hours. OSHA PEL (United States, 6/2016). TWA: 465 mg/m <sup>3</sup> 8 hours.



## Section 8. Exposure controls/personal protection

titanium dioxide	TWA: 100 ppm 8 hours. <b>OSHA PEL (United States, 6/2016).</b> TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust <b>ACGIH TLV (United States, 3/2016).</b>
aluminium hydroxide	TWA: 10 mg/m <sup>3</sup> 8 hours. <b>ACGIH TLV (United States, 3/2016).</b> TWA: 1 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction
n-butyl acetate	<b>NIOSH REL (United States, 10/2016).</b> STEL: 950 mg/m <sup>3</sup> 15 minutes. STEL: 200 ppm 15 minutes. TWA: 710 mg/m <sup>3</sup> 10 hours. TWA: 150 ppm 10 hours. <b>OSHA PEL (United States, 6/2016).</b> TWA: 710 mg/m <sup>3</sup> 8 hours. TWA: 150 ppm 8 hours. <b>ACGIH TLV (United States, 3/2017).</b> STEL: 150 ppm 15 minutes. TWA: 50 ppm 8 hours.
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	None.
silicon dioxide	<b>NIOSH REL (United States, 10/2016).</b> TWA: 6 mg/m <sup>3</sup> 10 hours.
Solvent naphtha (petroleum), light arom.	None.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

### Skin protection

## Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	: Liquid.
<b>Color</b>	: Gray.
<b>Odor</b>	: Solvent.
<b>Odor threshold</b>	: Not available.
<b>pH</b>	: Not available.
<b>Melting/freezing point</b>	: Not available.
<b>Boiling point</b>	: 126°C (258.8°F)
<b>boiling range</b>	: Not available.
<b>Flash point</b>	: Closed cup: 25°C (77°F)
<b>Evaporation rate</b>	: Not available.
<b>Flammability (solid, gas)</b>	: Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Upper:</b>	: Not determined.
<b>Lower:</b>	: Not determined.
<b>Vapor pressure</b>	: Not available.
<b>Vapor density</b>	: Not available.
<b>Relative density</b>	: 1.303
<b>Density</b>	: 10.87 lbs/gal      1.303 g/cm <sup>3</sup>
<b>Solubility</b>	: Not available.
<b>Solubility in water</b>	: Not available.
<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: Not available.

## Section 9. Physical and chemical properties

Decomposition temperature	: Not available.			
Viscosity	: Kinematic (room temperature): 2.07 cm <sup>2</sup> /s (207 cSt)			
Weight Volatiles	: 31.16% (w/w)			
Volume Volatiles	: 48.82 % (v/v)			
Weight Solids	: 68.84 % (w/w)			
Volume Solids	: 51.18 % (v/v)			
Regulatory VOC	: 3.4	lbs/gal	406	g/l minus water and exempt solvents
VOC Actual	: 3.4	lbs/gal	406	g/l

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
heptan-2-one n-butyl acetate	LD50 Oral	Rat	1600 mg/kg	-
	LC50 Inhalation Vapor	Rat	390 ppm	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
Solvent naphtha (petroleum), light arom.	LD50 Oral	Rat	10768 mg/kg	-
	LD50 Oral	Rat	8400 mg/kg	-

#### Irritation/Corrosion

**Section 11. Toxicological information**

Product/ingredient name	Result	Species	Score	Exposure	Observation
heptan-2-one	Skin - Mild irritant	Rabbit	-	24 hours 14 milligrams	-
titanium dioxide	Skin - Mild irritant	Human	-	72 hours 300 Micrograms Intermittent	-
n-butyl acetate	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
silicon dioxide	Eyes - Mild irritant	Rabbit	-	24 hours 25 milligrams	-
Solvent naphtha (petroleum), light arom.	Eyes - Mild irritant	Rabbit	-	24 hours 100 microliters	-

**Sensitization**

Not available.

**Mutagenicity**

Not available.

**Carcinogenicity**

Not available.

**Classification**

Product/ingredient name	OSHA	IARC	NTP
titanium dioxide	-	2B	-
silicon dioxide	-	3	-

**Reproductive toxicity**

Not available.

**Teratogenicity**

Not available.

**Specific target organ toxicity (single exposure)**

Name	Category	Route of exposure	Target organs
n-butyl acetate	Category 3	Not applicable.	Narcotic effects
Solvent naphtha (petroleum), light arom.	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Name	Result
Solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1

## Section 11. Toxicological information

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No specific data.  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

**General** : No known significant effects or critical hazards.  
**Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	2219.5 mg/kg

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
heptan-2-one	Acute LC50 131000 to 137000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
n-butyl acetate	Acute LC50 32 mg/l Marine water Acute LC50 62000 µg/l	Crustaceans - Artemia salina Fish - Danio rerio	48 hours 96 hours

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
heptan-2-one	2.26	-	low
n-butyl acetate	2.3	-	low
Solvent naphtha (petroleum), light arom.	-	10 to 2500	high

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations






**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.



## Section 14. Transport information

**Special precautions for user :** Please Note: The information provided in section 14 is based on a bulk package shipment via ground transport in North America. All shippers are responsible for ensuring the proper transportation classification and package/container requirements are followed for the relevant mode of transport.

**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	III	III	III	III	III
Environmental hazards	No.	No.	No.	No.	No.

## Section 15. Regulatory information

### U.S. Federal regulations

United States inventory (TSCA 8b): All components are listed or exempted.

### SARA 311/312

**Classification** : Fire hazard  
Delayed (chronic) health hazard

### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

**WARNING:** This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

## Section 15. Regulatory information

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
titanium dioxide	Yes.	No.	No.	No.
carbon black, respirable powder	Yes.	No.	No.	No.
ethylbenzene	Yes.	No.	No.	No.
cumene	Yes.	No.	No.	No.
toluene	No.	Yes.	No.	7000 µg/day (ingestion)

### International lists

#### National inventory

- Australia** : All components are listed or exempted.
- Canada** : All components are listed or exempted.
- China** : All components are listed or exempted.
- Europe** : At least one component is not listed in EINECS but all such components are listed in ELINCS.  
Please contact your supplier for information on the inventory status of this material.
- Japan** : **Japan inventory (ENCS)**: All components are listed or exempted.  
**Japan inventory (ISHL)**: At least one component is not listed.
- Malaysia** : At least one component is not listed.
- New Zealand** : All components are listed or exempted.
- Philippines** : All components are listed or exempted.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : All components are listed or exempted.
- Turkey** : At least one component is not listed.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health	2
Flammability	3
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

### National Fire Protection Association (U.S.A.)



## Section 16. Other information



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### History

Date of issue/Date of revision : 9 June 2021

Version : 2.27

MSDS # : 004770 0025 003070D160

### Key to abbreviations

: ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.





**BLACK TOPCOAT**

# SAFETY DATA SHEET

Issuing Date: 17-Mar-2021

Revision Date: 22-Oct-2020

Print Date: 30-Mar-2021

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: PG-6-BK1

Product Name: HIGH SOLIDS POLYURETHANE TOPCOAT  
GLOSS BAC-701 BLACK

Hentzen Coatings, Inc.  
6937 West Mill Road, Milwaukee, WI 53218-1225  
Recommended use of the chemical and restrictions on use

Company Phone Number: 1-414-353-4200  
Emergency telephone number ChemTrec 1-800-424-9300  
Industrial paint (Paint or Paint-Related), Restricted to professional users

## 2. HAZARDS IDENTIFICATION

### Classification

#### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin Corrosion/Irritation	Category 2
Serious eye damage/eye irritation	Category 2
Germ Cell Mutagenicity	Category 1B
Carcinogenicity	Category 1B
Reproductive Toxicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 2
Flammable Liquids	Category 2

### Label Elements

#### Emergency Overview

**DANGER**

#### Hazard Statements

Harmful if swallowed  
harmful if inhaled  
Causes skin irritation  
Causes serious eye irritation  
May cause genetic defects  
May cause cancer  
Suspected of damaging fertility or the unborn child  
May cause damage to organs through prolonged or repeated exposure  
Highly flammable liquid and vapor



Appearance Opaque

Physical state Liquid

Odor Solvent

#### Precautionary Statements - Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Use only outdoors or in a well-ventilated area  
Wear eye/face protection  
Do not breathe dust/fume/gas/mist/vapors/spray  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/Bond container and receiving equipment  
Use explosion-proof electrical/ ventilating/ lighting/ equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge

#### **Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
If skin irritation occurs: Get medical advice/attention  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth  
In case of fire: Use CO2, dry chemical, or foam for extinction

#### **Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool  
Store in accordance with local regulations

#### **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

#### **Hazards not otherwise classified (HNOC)**

##### **Other information**

- Harmful to aquatic life with long lasting effects
- Harmful to aquatic life

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **Contains a known or suspected carcinogen**

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
METHYL AMYL KETONE	110-43-0	20% - 30%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
BARIUM SULFATE	7727-43-7	10% - 20%	TWA: 5 mg/m <sup>3</sup> inhalable particulate matter, particulate matter containing no asbestos and <1% crystalline silica	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction
XYLENE(PURE)	1330-20-7	5% - 10%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
CARBON BLACK	1333-86-4	1% - 5%	TWA: 3 mg/m <sup>3</sup> inhalable particulate matter	TWA: 3.5 mg/m <sup>3</sup>
BUTYL ACETATE	123-86-4	1% - 5%	STEL: 150 ppm TWA: 50 ppm	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup>

ETHYL ACETATE	141-78-6	1% - 5%	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>
ETHYL ACETATE	141-78-6	1% - 5%	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>
ETHYLBENZENE	100-41-4	1% - 5%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
TOLUENE	108-88-3	0% - 1%	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm
METHYL ISOBUTYL KETONE	108-10-1	0% - 1%	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>
VM&P NAPHTHA	64742-89-8	0% - 1%	N/A	N/A

#### 4. FIRST AID MEASURES

##### First Aid Measures

<b>General advice</b>	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
<b>Eye Contact</b>	Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. If symptoms persist, call a physician.
<b>Skin Contact</b>	Wash off immediately with plenty of water.
<b>Inhalation</b>	Consult a physician if necessary. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.
<b>Ingestion</b>	Do NOT induce vomiting.
<b>Self-protection of the first aider</b>	Remove all sources of ignition.
<b>Most important symptoms and effects, both acute and delayed</b>	
<b>Most Important Symptoms and Effects</b>	No information available.
<b>Indication of any immediate medical attention and special treatment needed</b>	
<b>Notes to physician</b>	Treat symptomatically.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

##### Specific hazards arising from the chemical

Flammable.

##### Explosion Data

**Sensitivity to Mechanical Impact** no data available.

**Sensitivity to Static Discharge** Yes.

##### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

#### 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** Evacuate personnel to safe areas. Ensure adequate ventilation. Remove all sources of ignition. Use personal protective equipment as required. Avoid breathing vapors or mists. Ventilate the area.

#### Environmental Precautions

**Environmental Precautions** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

#### Methods and materials for containment and cleaning up

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Cleaning Up** Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

#### Precautions for safe handling

**Advice on safe handling** Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use explosion-proof electrical (ventilation and lighting) equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

#### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep away from heat, sparks and flame.

**Incompatible Products** None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

#### Exposure Guidelines

Chemical Name	ACGIH	OSHA	NIOSH IDLH
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
BARIUM SULFATE 7727-43-7	TWA: 5 mg/m <sup>3</sup> inhalable particulate matter, particulate matter containing no asbestos and <1% crystalline silica	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction	TWA: 10 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable dust
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
CARBON BLACK 1333-86-4	TWA: 3 mg/m <sup>3</sup> inhalable particulate matter	TWA: 3.5 mg/m <sup>3</sup>	IDLH: 1750 mg/m <sup>3</sup> TWA: 3.5 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> Carbon black in presence of Polycyclic aromatic hydrocarbons PAH
TERTIARY BUTYL ACETATE 540-88-5	STEL: 150 ppm TWA: 50 ppm	TWA: 200 ppm TWA: 950 mg/m <sup>3</sup>	IDLH: 1500 ppm TWA: 200 ppm TWA: 950 mg/m <sup>3</sup>
BUTYL ACETATE 123-86-4	STEL: 150 ppm TWA: 50 ppm	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup>	IDLH: 1700 ppm TWA: 150 ppm

			TWA: 710 mg/m <sup>3</sup> STEL: 200 ppm STEL: 950 mg/m <sup>3</sup>
ETHYL ACETATE 141-78-6	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>	IDLH: 2000 ppm TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>
ETHYL ACETATE 141-78-6	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>	IDLH: 2000 ppm TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>
TOLUENE 108-88-3	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE 108-10-1	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m <sup>3</sup> STEL: 75 ppm STEL: 300 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

#### Exposure controls

##### Engineering Measures

Showers  
Eyewash stations  
Ventilation systems.

#### Individual protection measures, such as personal protective equipment

##### Eye/Face Protection

Use personal protective equipment as required.

##### Skin and Body Protection

Chemical resistant apron.

##### Respiratory Protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

##### Hygiene Measures

Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	Appearance	Opaque
Odor	Solvent.	Odor Threshold	No data available
pH	No data available	Flash Point	27 °F / -3 °C
Decomposition temperature	No data available	Boiling Point	170 °F / 77 °C
Melting Point / Melting Range	No data available	Freezing Point	No data available
Vapor Pressure @20°C (kPa)	No data available	Partition coefficient:	No data available
Vapor Density	No data available	Density	No data available
Bulk density	No data available	Specific Gravity	1.12
Evaporation Rate	No data available	Water solubility	No data available
Dynamic viscosity	No data available	Weight per Gallon (lbs/gal):	9.30
		EPA VOC (lb/gal)	3.42
Flammability Limits in Air			
Upper	0.66 %		
Lower	0.12 %		

## 10. STABILITY AND REACTIVITY

### Reactivity

No data available

### Chemical stability

Stable under recommended storage conditions.

### Conditions to Avoid

Extremes of temperature and direct sunlight.

### Incompatible Materials

None known based on information supplied.

### Hazardous Decomposition Products

None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

<b>Product Information</b>	The product has not been tested
<b>Inhalation</b>	There is no data for this product.
<b>Eye Contact</b>	There is no data for this product.
<b>Skin Contact</b>	There is no data for this product.
<b>Ingestion</b>	There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	2000 - 4000 ppm ( Rat ) 6 h
BARIUM SULFATE 7727-43-7	= 307000 mg/kg ( Rat )	N/A	N/A
XYLENE(PURE) 1330-20-7	= 3500 mg/kg ( Rat )	> 4350 mg/kg ( Rabbit )	= 29.08 mg/L ( Rat ) 4 h
CARBON BLACK 1333-86-4	> 15400 mg/kg ( Rat )	N/A	> 4.6 mg/m <sup>3</sup> ( Rat ) 4 h
TERTIARY BUTYL ACETATE 540-88-5	= 4100 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 9482 mg/m <sup>3</sup> ( Rat ) 4 h
BUTYL ACETATE 123-86-4	= 10768 mg/kg ( Rat )	> 17600 mg/kg ( Rabbit )	= 0.74 mg/L ( Rat ) 4 h
ETHYL ACETATE 141-78-6	= 5620 mg/kg ( Rat )	> 18000 mg/kg ( Rabbit )	= 4000 ppm ( Rat ) 4 h
ETHYL ACETATE 141-78-6	= 5620 mg/kg ( Rat )	> 18000 mg/kg ( Rabbit )	= 4000 ppm ( Rat ) 4 h
ETHYLBENZENE 100-41-4	= 3500 mg/kg ( Rat )	= 15400 mg/kg ( Rabbit )	= 17.4 mg/L ( Rat ) 4 h
TOLUENE 108-88-3	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h
METHYL ISOBUTYL KETONE 108-10-1	= 2080 mg/kg ( Rat )	= 3000 mg/kg ( Rabbit )	2000 - 4000 ppm ( Rat ) 4 h

### Information on toxicological effects

**Symptoms** No information available.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Sensitization** No information available.  
**MUTAGENIC EFFECTS** No information available.  
**Carcinogenicity** This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly



carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
CARBON BLACK 1333-86-4	A3	Group 2B	N/A	X
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X
TOLUENE 108-88-3	N/A	Group 3	N/A	N/A
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	N/A	X

**Legend:**

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

**Reproductive Toxicity**

No information available.

**Specific target organ systemic toxicity (single exposure)**

No information available.

**Specific target organ systemic toxicity (repeated exposure)**

No information available.

**Target Organ Effects**

Central nervous system (CNS), Eyes, Lymphatic System, Peripheral Nervous System (PNS), Respiratory system, Skin.

**Aspiration hazard**

No information available.

**Numerical measures of toxicity - Product Information**

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 763 mg/kg

ATEmix (dermal) 5949 mg/kg

ATEmix (inhalation-dust/mist) 2 mg/l

Oral LD50 2214 mg/kg (rat) Estimated

Dermal LD50 9823 mg/kg (rat) Estimated

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
XYLENE(PURE) 1330-20-7	N/A	13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50	0.6: 48 h Gammarus lacustris mg/L LC50 3.82: 48 h water flea mg/L EC50

TERTIARY BUTYL ACETATE 540-88-5	N/A	296 - 362: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
BUTYL ACETATE 123-86-4	674.7: 72 h Desmodemus subspicatus mg/L EC50	17 - 19: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Lepomis macrochirus mg/L LC50 static	N/A
ETHYL ACETATE 141-78-6	N/A	220 - 250: 96 h Pimephales promelas mg/L LC50 flow-through 352 - 500: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 484: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	560: 48 h Daphnia magna mg/L EC50 Static
ETHYL ACETATE 141-78-6	N/A	220 - 250: 96 h Pimephales promelas mg/L LC50 flow-through 352 - 500: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 484: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	560: 48 h Daphnia magna mg/L EC50 Static
ETHYLBENZENE 100-41-4	1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 2.6 - 11.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 4.6: 72 h Pseudokirchneriella subcapitata mg/L EC50 438: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static 7.55 - 11: 96 h Pimephales promelas mg/L LC50 flow-through 9.1 - 15.6: 96 h Pimephales promelas mg/L LC50 static 32: 96 h Lepomis macrochirus mg/L LC50 static 4.2: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 9.6: 96 h Poecilia reticulata mg/L LC50 static	1.8 - 2.4: 48 h Daphnia magna mg/L EC50
TOLUENE 108-88-3	12.5: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 433: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 15.0: 96 h Lepomis macrochirus mg/L LC50 static 14.1 - 17.16: 96 h Oncorhynchus mykiss mg/L LC50 static 15.22 - 19.05: 96 h Pimephales promelas mg/L LC50 flow-through 5.89 - 7.81: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 50.87 - 70.34: 96 h Poecilia reticulata mg/L LC50 static 12.6: 96 h Pimephales promelas mg/L LC50 static 28.2: 96 h Poecilia reticulata mg/L LC50 semi-static 5.8: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 54: 96 h Oryzias latipes mg/L LC50 static	5.46 - 9.83: 48 h Daphnia magna mg/L EC50 Static 11.5: 48 h Daphnia magna mg/L EC50
METHYL ISOBUTYL KETONE 108-10-1	400: 96 h Pseudokirchneriella subcapitata mg/L EC50	496 - 514: 96 h Pimephales promelas mg/L LC50 flow-through	170: 48 h Daphnia magna mg/L EC50

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
METHYL AMYL KETONE 110-43-0	1.98
XYLENE(PURE) 1330-20-7	3.15
BUTYL ACETATE 123-86-4	1.81
ETHYL ACETATE 141-78-6	0.6
ETHYL ACETATE 141-78-6	0.6
ETHYLBENZENE 100-41-4	3.2
TOLUENE 108-88-3	2.7

METHYL ISOBUTYL KETONE 108-10-1	1.19
------------------------------------	------

**Other adverse effects** No information available

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Waste treatment methods** This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**US EPA Waste Number** D001

Chemical Name	RCRA - Basis for Listing	RCRA - D Series Wastes
XYLENE(PURE) 1330-20-7	Included in waste stream: F039	N/A
ETHYL ACETATE 141-78-6	Included in waste stream: F039	N/A
ETHYL ACETATE 141-78-6	Included in waste stream: F039	N/A
ETHYLBENZENE 100-41-4	Included in waste stream: F039	N/A
TOLUENE 108-88-3	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151	N/A
METHYL ISOBUTYL KETONE 108-10-1	Included in waste stream: F039	N/A

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
TOLUENE 108-88-3	N/A	N/A	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	N/A

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
XYLENE(PURE) 1330-20-7	Toxic Ignitable
BUTYL ACETATE 123-86-4	Toxic
ETHYL ACETATE 141-78-6	Toxic Ignitable
ETHYL ACETATE 141-78-6	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable
TOLUENE 108-88-3	Toxic Ignitable

### 14. TRANSPORT INFORMATION

DOT

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	149, B52, IB2, T4, TP1, TP8, TP28
Description	UN1263, Paint, 3, II, RQ
Emergency Response Guide Number	128

TDG

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

MEX

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

ICAO

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

IATA

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

IMDG/IMO

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, 3, II

ADR/RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1

Tunnel restriction code (D/E)  
Special Provisions 163, 640C, 650, 367  
Description UN1263, Paint, 3, II, (D/E)  
ADR/RID-Labels 3

**ADN**

Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Classification Code F1  
Special Provisions 163, 640C, 650  
Description UN1263, Paint, 3, II  
Hazard Labels 3  
Limited Quantity (LQ) 5 L  
Ventilation VE01

**15. REGULATORY INFORMATION**

**International Inventories**

TSCA Complies  
DSL/NDL Complies  
EINECS/ELINCS Complies  
ENCS Complies  
IECSC Complies  
KECL Complies  
PICCS Complies  
AICS Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List  
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
ENCS - Japan Existing and New Chemical Substances  
IECSC - China Inventory of Existing Chemical Substances  
KECL - Korean Existing and Evaluated Chemical Substances  
PICCS - Philippines Inventory of Chemicals and Chemical Substances  
AICS - Australian Inventory of Chemical Substances

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
XYLENE(PURE)	1330-20-7	1.0
ETHYLBENZENE	100-41-4	0.1
METHYL ISOBUTYL KETONE	108-10-1	0.1

**SARA 311/312 Hazard Categories**

Acute Health Hazard Yes  
Chronic Health Hazard No  
Fire Hazard Yes  
Sudden Release of Pressure Hazard No  
Reactive Hazard No

**CAA (Clean Air Act)**

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
XYLENE(PURE)	1330-20-7	Present
ETHYLBENZENE	100-41-4	Present

TOLUENE	108-88-3	Present
METHYL ISOBUTYL KETONE	108-10-1	Present

#### Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
XYLENE(PURE)	100 lb	N/A	N/A	X
TERTIARY BUTYL ACETATE	N/A	N/A	N/A	X
BUTYL ACETATE	5000 lb	N/A	N/A	X
ETHYLBENZENE	1000 lb	X	X	X
TOLUENE	1000 lb	X	X	X

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
TERTIARY BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
ETHYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
ETHYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ
TOLUENE	1000 lb 1 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ RQ 1 lb final RQ RQ 0.454 kg final RQ
METHYL ISOBUTYL KETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

#### State Regulations

##### California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
CARBON BLACK	1333-86-4	Carcinogen
ETHYLBENZENE	100-41-4	Carcinogen
TOLUENE	108-88-3	Developmental
METHYL ISOBUTYL KETONE	108-10-1	Carcinogen Developmental

#### U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
METHYL AMYL KETONE	X	X	X	N/A	N/A
BARIUM SULFATE	X	X	X	N/A	N/A
XYLENE(PURE)	X	X	X	X	N/A
CARBON BLACK	X	X	X	X	N/A
TERTIARY BUTYL ACETATE	X	X	X	N/A	N/A
BUTYL ACETATE	X	X	X	N/A	N/A
ETHYL ACETATE	X	X	X	N/A	X

ETHYL ACETATE	X	X	X	N/A	N/A
ETHYLBENZENE	X	X	X	X	N/A
TOLUENE	X	X	X	X	N/A
METHYL ISOBUTYL KETONE	X	X	X	X	N/A

### International Regulations

#### Mexico - Grade

Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm
BARIUM SULFATE	N/A	Mexico: TWA 10 mg/m <sup>3</sup>
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: STEL 150 ppm
CARBON BLACK	A3	Mexico: TWA 3 mg/m <sup>3</sup>
TERTIARY BUTYL ACETATE	N/A	Mexico: TWA 200 ppm
BUTYL ACETATE	N/A	Mexico: TWA 150 ppm Mexico: TWA 710 mg/m <sup>3</sup> Mexico: STEL 200 ppm
ETHYL ACETATE	N/A	Mexico: TWA 400 ppm
ETHYL ACETATE	N/A	Mexico: TWA 400 ppm
ETHYLBENZENE	A3	Mexico: TWA 20 ppm
TOLUENE	N/A	Mexico: TWA 20 ppm
METHYL ISOBUTYL KETONE	A3	Mexico: TWA 20 ppm Mexico: STEL 75 ppm

## 16. OTHER INFORMATION

#### NFPA

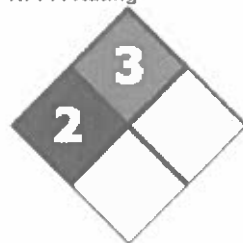
Health Hazard 2

Flammability 3

Instability 0

Physical and Chemical Hazards -

#### NFPA Rating



#### HMIS

Health Hazard 1 \*

Flammability 3

Physical Hazard 0

Personal protection X

Chronic Hazard Star Legend

\* Chronic Health Hazard

Issuing Date:

17-Mar-2021

Revision Date:

22-Oct-2020

Revision Note

No information available

#### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

end







Orange Tuffcoat

# SAFETY DATA SHEET

Issuing Date: 31-Jan-2017

Revision Date: 31-Jan-2017

Revision Number: 1

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: AXPF-6-OR2 Q1

Product Name: H-SOLID EXT FLAT ORANGE FSD#32246  
QUART KIT

Hentzen Coatings, Inc.

6937 West Mill Road, Milwaukee, WI 53218-1225

Company Phone Number: 1-414-353-4200

Recommended use of the chemical and restrictions on use

Emergency telephone number ChemTrec 1-800-424-9300  
Industrial paint (Paint or Paint-Related), Restricted to professional users

## 2. HAZARDS IDENTIFICATION

### Classification

### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2
Flammable Liquids	Category 2

### Label Elements

### Emergency Overview

#### DANGER

#### Hazard Statements

Harmful if swallowed

harmful if inhaled

Causes serious eye irritation

May cause an allergic skin reaction

May cause cancer

Suspected of damaging fertility or the unborn child

Highly flammable liquid and vapor



Appearance Opaque

Physical state Liquid

Odor Solvent

### Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product



Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Contaminated work clothing should not be allowed out of the workplace  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/Bond container and receiving equipment  
Use explosion-proof electrical/ ventilating/ lighting/ equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth  
In case of fire: Use CO2, dry chemical, or foam for extinction

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool  
Store in accordance with local regulations

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

**Other information**

- Toxic to aquatic life

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Contains a known or suspected carcinogen**

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
STRONTIUM CHROMATE	7789-06-2	10% - 20%	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO <sub>3</sub> applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect
TITANIUM DIOXIDE	13463-67-7	5% - 10%	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust
ACETONE	67-64-1	5% - 10%	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>
TALC	14807-96-6	5% - 10%	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>

CYCLOHEXANONE	108-94-1	1% - 5%	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLENE(PURE)	1330-20-7	1% - 5%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	14808-60-7	1% - 5%	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction
METHYL ISOBUTYL KETONE	108-10-1	1% - 5%	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>
TOLUENE	108-88-3	0% - 1%	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm
ETHYLBENZENE	100-41-4	0% - 1%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>

#### 4. FIRST AID MEASURES

##### First Aid Measures

<b>General advice</b>	Immediate medical attention is required.
<b>Eye Contact</b>	Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. Call a physician immediately.
<b>Skin Contact</b>	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Inhalation</b>	Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Immediate medical attention is required. If not breathing, give artificial respiration.
<b>Ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required. Avoid contact with eyes, skin and clothing.
<b>Most important symptoms and effects, both acute and delayed</b>	
<b>Most Important Symptoms and Effects</b>	No information available.
<b>Indication of any immediate medical attention and special treatment needed</b>	
<b>Notes to physician</b>	May cause sensitization of susceptible persons.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

##### Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe

fumes. May cause sensitization by inhalation and skin contact. Extremely flammable.

**Explosion Data**

**Sensitivity to Mechanical Impact** no data available.

**Sensitivity to Static Discharge** Yes.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions**

Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Avoid breathing vapors or mists. Ventilate the area.

**Environmental Precautions**

**Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

**Methods and materials for containment and cleaning up**

**Methods for Containment**

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for Cleaning Up**

Cover liquid spill with sand, earth or other noncombustible absorbent material. Sweep up and shovel into suitable containers for disposal. Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on safe handling**

Avoid contact with eyes, skin and clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe vapor or mist. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from heat, sparks and flame.

**Incompatible Products**

None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH	OSHA	NIOSH IDLH
STRONTIUM CHROMATE 7789-06-2	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO <sub>3</sub> applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect	IDLH: 15 mg/m <sup>3</sup> Cr(VI) TWA: 0.0002 mg/m <sup>3</sup> Cr
CALCIUM METASILICATE	TWA: 1 mg/m <sup>3</sup> inhalable particulate	N/A	

13983-17-0	matter, particulate matter containing no asbestos and <1% crystalline silica		
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
ACETONE 67-64-1	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m <sup>3</sup>
TALC 14807-96-6	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit	IDLH: 1000 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup> containing no Asbestos and <1% Quartz respirable dust
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT 66402-68-4	STEL: 10 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr TWA: 0.02 mg/m <sup>3</sup> Mn respirable particulate matter TWA: 0.1 mg/m <sup>3</sup> Mn inhalable particulate matter	TWA: 5 mg/m <sup>3</sup> Zr	IDLH: 25 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> except Zirconium tetrachloride Zr STEL: 10 mg/m <sup>3</sup> Zr
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
QUARTZ CRYSTALLINE SILICA 14808-60-7	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction	IDLH: 50 mg/m <sup>3</sup> respirable dust TWA: 0.05 mg/m <sup>3</sup> respirable dust
METHYL ISOBUTYL KETONE 108-10-1	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m <sup>3</sup> STEL: 75 ppm STEL: 300 mg/m <sup>3</sup>
TOLUENE 108-88-3	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

### Exposure controls

#### Engineering Measures

Showers  
Eyewash stations  
Ventilation systems.

#### Individual protection measures, such as personal protective equipment

##### Eye/Face Protection

Use personal protective equipment as required.

##### Skin and Body Protection

Chemical resistant apron.

**Respiratory Protection**

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene Measures**

Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical state</b>	Liquid	<b>Appearance</b>	Opaque
<b>Odor</b>	Solvent.	<b>Odor Threshold</b>	No data available
<b>pH</b>	No data available	<b>Flash Point</b>	-4 °F / -20 °C
<b>Decomposition temperature</b>	No data available	<b>Boiling Point</b>	133 °F / 56 °C
<b>Melting Point / Melting Range</b>	No data available	<b>Freezing Point</b>	No data available
<b>Vapor Pressure @20°C (kPa)</b>	No data available	<b>Partition coefficient:</b>	No data available
<b>Vapor Density</b>	No data available	<b>Density</b>	No data available
<b>Bulk density</b>	No data available	<b>Specific Gravity</b>	1.46
<b>Evaporation Rate</b>	No data available	<b>Water solubility</b>	No data available
<b>Dynamic viscosity</b>	No data available	<b>Weight per Gallon (lbs/gal):</b>	12.14
		<b>Flammability Limits in Air</b>	
		Upper	2.51 %
		Lower	0.41 %

**10. STABILITY AND REACTIVITY****Reactivity**

No data available

**Chemical stability**

Stable under recommended storage conditions.

**Conditions to Avoid**

Extremes of temperature and direct sunlight.

**Incompatible Materials**

None known based on information supplied.

**Hazardous Decomposition Products**

None known based on information supplied.

**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

<b>Product Information</b>	The product has not been tested
<b>Inhalation</b>	There is no data for this product.
<b>Eye Contact</b>	There is no data for this product.
<b>Skin Contact</b>	There is no data for this product.
<b>Ingestion</b>	There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
STRONTIUM CHROMATE 7789-06-2	= 811 mg/kg ( Rat )	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	> 10000 mg/kg ( Rat )	N/A	N/A
ACETONE 67-64-1	= 5800 mg/kg ( Rat )	> 15700 mg/kg ( Rabbit )	= 50100 mg/m <sup>3</sup> ( Rat ) 8 h

METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h
METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
XYLENE(PURE) 1330-20-7	= 3500 mg/kg ( Rat )	> 4350 mg/kg ( Rabbit )	= 29.08 mg/L ( Rat ) 4 h
QUARTZ CRYSTALLINE SILICA 14808-60-7	= 500 mg/kg ( Rat )	N/A	N/A
METHYL ISOBUTYL KETONE 108-10-1	= 2080 mg/kg ( Rat )	= 3000 mg/kg ( Rabbit )	= 8.2 mg/L ( Rat ) 4 h
TOLUENE 108-88-3	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h
ETHYLBENZENE 100-41-4	= 3500 mg/kg ( Rat )	= 15400 mg/kg ( Rabbit )	= 17.4 mg/L ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h

**Information on toxicological effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization** No information available.

**MUTAGENIC EFFECTS** No information available.

**Carcinogenicity** This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
STRONTIUM CHROMATE 7789-06-2	A2	Group 1	Known	X
CALCIUM METASILICATE 13983-17-0	N/A	Group 3	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
TALC 14807-96-6	N/A	Group 2B Group 3	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
QUARTZ CRYSTALLINE SILICA 14808-60-7	A2	Group 1	Known	X
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	N/A	X
TOLUENE 108-88-3	N/A	Group 3	N/A	N/A
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A

**Legend:**

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**NTP (National Toxicology Program)**

Known - Known Carcinogen

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

Reproductive Toxicity	No information available.
Specific target organ systemic toxicity (single exposure)	No information available.
Specific target organ systemic toxicity (repeated exposure)	No information available.
Chronic Toxicity	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.
Target Organ Effects	Blood, Central nervous system (CNS), Central Vascular System (CVS), Eyes, Kidney, Liver, Lungs, Peripheral Nervous System (PNS), Respiratory system, Skin.
Aspiration hazard	No information available.

#### Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	1603 mg/kg
ATEmix (dermat)	6233 mg/kg
ATEmix (inhalation-dust/mist)	5 mg/l
Oral LD50	2714 mg/kg (rat) Estimated
Dermal LD50	13141 mg/kg (rat) Estimated

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
ACETONE 67-64-1	N/A	4.74 - 6.33: 96 h Oncorhynchus mykiss mL/L LC50 6210 - 8120: 96 h Pimephales promelas mg/L LC50 static 8300: 96 h Lepomis macrochirus mg/L LC50	10294 - 17704: 48 h Daphnia magna mg/L EC50 Static 12600 - 12700: 48 h Daphnia magna mg/L EC50
TALC 14807-96-6	N/A	100: 96 h Brachydanio rerio g/L LC50 semi-static	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
XYLENE(PURE) 1330-20-7	N/A	13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50	0.6: 48 h Gammarus lacustris mg/L LC50 3.82: 48 h water flea mg/L EC50
METHYL ISOBUTYL KETONE 108-10-1	400: 96 h Pseudokirchneriella subcapitata mg/L EC50	496 - 514: 96 h Pimephales promelas mg/L LC50 flow-through	170: 48 h Daphnia magna mg/L EC50
TOLUENE 108-88-3	12.5: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 433: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 15.0: 96 h Lepomis macrochirus mg/L LC50 static 14.1 - 17.16: 96 h Oncorhynchus mykiss mg/L LC50 static 15.22 - 19.05: 96	5.46 - 9.83: 48 h Daphnia magna mg/L EC50 Static 11.5: 48 h Daphnia magna mg/L EC50



		h Pimephales promelas mg/L LC50 flow-through 5.89 - 7.81; 96 h Oncorhynchus mykiss mg/L LC50 flow-through 50.87 - 70.34; 96 h Poecilia reticulata mg/L LC50 static 12.6; 96 h Pimephales promelas mg/L LC50 static 28.2; 96 h Poecilia reticulata mg/L LC50 semi-static 5.8; 96 h Oncorhynchus mykiss mg/L LC50 semi-static 54; 96 h Oryzias latipes mg/L LC50 static	
ETHYLBENZENE 100-41-4	1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 2.6 - 11.3; 72 h Pseudokirchneriella subcapitata mg/L EC50 static 4.6; 72 h Pseudokirchneriella subcapitata mg/L EC50 438; 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static 7.55 - 11; 96 h Pimephales promelas mg/L LC50 flow-through 9.1 - 15.6; 96 h Pimephales promelas mg/L LC50 static 32; 96 h Lepomis macrochirus mg/L LC50 static 4.2; 96 h Oncorhynchus mykiss mg/L LC50 semi-static 9.6; 96 h Poecilia reticulata mg/L LC50 static	1.8 - 2.4: 48 h Daphnia magna mg/L EC50
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9; 96 h Pimephales promelas mg/L LC50	N/A

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
ACETONE 67-64-1	-0.24
METHYL AMYL KETONE 110-43-0	1.98
CYCLOHEXANONE 108-94-1	0.86
METHYL AMYL KETONE 110-43-0	1.98
XYLENE(PURE) 1330-20-7	3.15
METHYL ISOBUTYL KETONE 108-10-1	1.19
TOLUENE 108-88-3	2.7
ETHYLBENZENE 100-41-4	3.2

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods****Waste treatment methods**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**US EPA Waste Number**

D001

Chemical Name	RCRA - Basis for Listing	RCRA - D Series Wastes
ACETONE 67-64-1	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A
XYLENE(PURE)	Included in waste stream: F039	N/A

1330-20-7		
METHYL ISOBUTYL KETONE 108-10-1	Included in waste stream: F039	N/A
TOLUENE 108-88-3	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151	N/A
ETHYLBENZENE 100-41-4	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
TOLUENE 108-88-3	N/A	N/A	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	N/A

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
STRONTIUM CHROMATE 7789-06-2	Toxic Corrosive Ignitable
ACETONE 67-64-1	Ignitable
SILICEOUS EXTENDER PIGMENT 66402-68-4	Toxic
XYLENE(PURE) 1330-20-7	Toxic Ignitable
TOLUENE 108-88-3	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable

#### 14. TRANSPORT INFORMATION

##### DOT

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	149, B52, IB2, T4, TP1, TP8, TP28
Description	UN1263, Paint, Marine Pollutant, 3, II, RQ
Emergency Response Guide Number	128

##### TDG

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, Marine Pollutant, 3, II

**MEX**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

**ICAO**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

**IATA**

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

**IMDG/IMO**

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

**RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, Environmentally Hazardous, 3, II

**ADR/RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, Environmentally Hazardous, 3, II, (D/E)
ADR/RID-Labels	3

**ADN**

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, Environmentally Hazardous, 3, II
Hazard Labels	3
Limited Quantity (LQ)	5 L
Ventilation	VE01

**15. REGULATORY INFORMATION**

**International Inventories**

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

### US Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
STRONTIUM CHROMATE	7789-06-2	0.1
SILICEOUS EXTENDER PIGMENT	66402-68-4	1.0
XYLENE(PURE)	1330-20-7	1.0
METHYL ISOBUTYL KETONE	108-10-1	1.0
ETHYLBENZENE	100-41-4	0.1

#### SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

#### CAA (Clean Air Act)

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
STRONTIUM CHROMATE	7789-06-2	Present
XYLENE(PURE)	1330-20-7	Present
METHYL ISOBUTYL KETONE	108-10-1	Present
TOLUENE	108-88-3	Present
ETHYLBENZENE	100-41-4	Present

#### Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
STRONTIUM CHROMATE	10 lb	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	N/A	N/A
XYLENE(PURE)	100 lb	N/A	N/A	X
TOLUENE	1000 lb	X	X	X
ETHYLBENZENE	1000 lb	X	X	X

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
STRONTIUM CHROMATE	10 lb	N/A	RQ 10 lb final RQ RQ 4.54 kg final RQ
ACETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
METHYL ISOBUTYL KETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
TOLUENE	1000 lb 1 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ RQ 1 lb final RQ RQ 0.454 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

### State Regulations

#### California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
STRONTIUM CHROMATE	7789-06-2	Carcinogen Developmental Female Reproductive Male Reproductive
TITANIUM DIOXIDE	13463-67-7	Carcinogen
QUARTZ CRYSTALLINE SILICA	14808-60-7	Carcinogen
METHYL ISOBUTYL KETONE	108-10-1	Carcinogen Developmental
TOLUENE	108-88-3	Developmental
ETHYLBENZENE	100-41-4	Carcinogen

### U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
STRONTIUM CHROMATE	X	X	X	X	X
TITANIUM DIOXIDE	X	X	X	N/A	X
ACETONE	X	X	X	N/A	N/A
TALC	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	N/A
CYCLOHEXANONE	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	X	X	N/A
XYLENE(PURE)	X	X	X	X	X
QUARTZ CRYSTALLINE SILICA	X	X	X	X	X
METHYL ISOBUTYL KETONE	X	X	X	X	X
TOLUENE	X	X	X	X	X
ETHYLBENZENE	X	X	X	X	X

### International Regulations

Mexico - Grade

Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
STRONTIUM CHROMATE	A1	Mexico: TWA 0.01 mg/m <sup>3</sup> Mexico: TWA 0.5 mg/m <sup>3</sup>
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
ACETONE	N/A	Mexico: TWA 1000 ppm Mexico: TWA 2400 mg/m <sup>3</sup> Mexico: STEL 1260 ppm Mexico: STEL 3000 mg/m <sup>3</sup>
TALC	N/A	Mexico: TWA 2 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT	N/A	Mexico: TWA 5 mg/m <sup>3</sup> Mexico: TWA 0.2 mg/m <sup>3</sup> Mexico: STEL 10 mg/m <sup>3</sup>
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 150 ppm Mexico: STEL 655 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	N/A	Mexico: TWA 0.1 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 205 mg/m <sup>3</sup> Mexico: STEL 75 ppm Mexico: STEL 307 mg/m <sup>3</sup>
TOLUENE	N/A	Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>
ETHYLBENZENE	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 125 ppm Mexico: STEL 545 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>

**16. OTHER INFORMATION****NFPA**

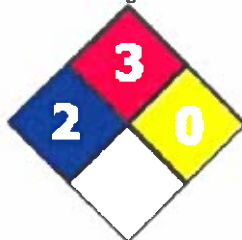
Health Hazard 2

Flammability 3

Instability 0

Physical and Chemical  
Hazards -

NFPA Rating

**HMIS**

Health Hazard 1 \*

Flammability 3

Physical Hazard 0

Personal protection X

Chronic Hazard Star Legend

\* Chronic Health Hazard

Issuing Date: 31-Jan-2017  
Revision Date: 31-Jan-2017  
Revision Note  
No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

end







Issuing Date: 10-Aug-2015

Revision Date: 10-Aug-2015

Revision Number: 1

White Topcoat

## SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: AXP6-6-W9 Q2

Product Name: H-SOLIDS TOPCOAT "GLOSS WHITE BAC 702" ( 2 QT/KIT )

Hentzen Coatings, Inc.

6937 West Mill Road, Milwaukee, WI 53218-1225

Recommended use of the chemical and restrictions on use

Company Phone Number: 1-414-353-4200

Emergency telephone number ChemTrec 1-800-424-9300

Industrial paint (Paint or Paint-Related), Restricted to professional users

### 2. HAZARDS IDENTIFICATION

#### Classification

#### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Corrosion/Irritation	Category 2
Serious eye damage/eye irritation	Category 2
Germ Cell Mutagenicity	Category 1B
Carcinogenicity	Category 1B
Flammable Liquids	Category 2

#### Label Elements

#### Emergency Overview

#### DANGER

#### Hazard Statements

Causes skin irritation

Causes serious eye irritation

May cause genetic defects

May cause cancer

Highly flammable liquid and vapor



Appearance Opaque

Physical state Liquid

Odor Solvent

#### Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Wear eye/face protection

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/Bond container and receiving equipment

Use explosion-proof electrical/ ventilating/ lighting/ equipment

Use only non-sparking tools



Take precautionary measures against static discharge

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

If skin irritation occurs: Get medical advice/attention

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

In case of fire: Use CO2, dry chemical, or foam for extinction

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool

Store in accordance with local regulations

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

**Other information**

- May be harmful if swallowed

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Contains a known or suspected carcinogen**

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
TITANIUM DIOXIDE	13463-67-7	40% - 50%	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust
METHYL AMYL KETONE	110-43-0	10% - 20%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLENE(PURE)	1330-20-7	5% - 10%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
ETHYL ACETATE	141-78-6	1% - 5%	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>
ETHYLBENZENE	100-41-4	0% - 1%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	108-10-1	0% - 1%	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>
LIGHT AROMATIC PETROLEUM DISTILLATE	64742-95-6	0% - 1%	N/A	N/A

### 4. FIRST AID MEASURES

**First Aid Measures**

**General advice**

If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.

**Eye Contact**

Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. If symptoms persist, call a physician.

**Skin Contact**

Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

**Inhalation**

Consult a physician if necessary. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Ingestion Do NOT induce vomiting.

Self-protection of the first aider Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

### Specific hazards arising from the chemical

Extremely flammable.

#### Explosion Data

Sensitivity to Mechanical Impact no data available.

Sensitivity to Static Discharge Yes.

### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required. Remove all sources of ignition. Avoid breathing vapors or mists. Ventilate the area.

### Environmental Precautions

Environmental Precautions Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

### Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Cover liquid spill with sand, earth or other noncombustible absorbent material. Pick up and transfer to properly labeled containers. Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

Advice on safe handling Avoid contact with eyes, skin and clothing. Wear protective gloves/protective clothing/eye protection/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not breathe vapor or mist. Do not eat, drink or smoke when using this product. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from heat, sparks and flame.

**Incompatible Products** None known based on information supplied.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH	OSHA	NIOSH IDLH
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
ETHYL ACETATE 141-78-6	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>	IDLH: 2000 ppm TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE 108-10-1	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m <sup>3</sup> STEL: 75 ppm STEL: 300 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

**Exposure controls**

**Engineering Measures** Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** Use personal protective equipment as required.

**Skin and Body Protection** Chemical resistant apron.

**Respiratory Protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	Liquid	Appearance	Opaque
Odor	Solvent	Odor Threshold	No data available
pH	No data available	Flash Point	12 °F / -11 °C
Decomposition temperature	No data available	Boiling Point	170 °F / 77 °C
Melting Point / Melting Range	No data available	Freezing Point	No data available

Vapor Pressure @20°C (kPa)	No data available	Partition coefficient:	No data available
Vapor Density	No data available	Density	No data available
Bulk density	No data available	Specific Gravity	1.45
Evaporation Rate	No data available	Water solubility	No data available
Dynamic viscosity	No data available	Weight per Gallon (lbs/gal):	12.03
		Flammability Limits in Air	
		Upper	1.91 %
		Lower	0.29 %

## 10. STABILITY AND REACTIVITY

### Reactivity

No data available

### Chemical stability

Stable under recommended storage conditions.

### Conditions to Avoid

Extremes of temperature and direct sunlight.

### Incompatible Materials

None known based on information supplied.

### Hazardous Decomposition Products

None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

<b>Product Information</b>	The product has not been tested
<b>Inhalation</b>	There is no data for this product.
<b>Eye Contact</b>	There is no data for this product.
<b>Skin Contact</b>	There is no data for this product.
<b>Ingestion</b>	There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
TITANIUM DIOXIDE 13463-67-7	10000 mg/kg ( Rat )	N/A	N/A
METHYL AMYL KETONE 110-43-0	1600 mg/kg ( Rat )	12.6 mL/kg ( Rabbit )	2000 ppm ( Rat ) 4 h
XYLENE(PURE) 1330-20-7	3500 mg/kg ( Rat )	4350 mg/kg ( Rabbit )	29.08 mg/L ( Rat ) 4 h
ETHYL ACETATE 141-78-6	5620 mg/kg ( Rat )	18000 mg/kg ( Rabbit )	N/A
ETHYLBENZENE 100-41-4	3500 mg/kg ( Rat )	15400 mg/kg ( Rabbit )	17.2 mg/L ( Rat ) 4 h
METHYL ISOBUTYL KETONE 108-10-1	2080 mg/kg ( Rat )	3000 mg/kg ( Rabbit )	8.2 mg/L ( Rat ) 4 h

### Information on toxicological effects

**Symptoms** No information available.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Sensitization** No information available.  
**MUTAGENIC EFFECTS** No information available.  
**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	N/A	X

**Legend:**

Reproductive Toxicity No information available.  
Specific target organ systemic No information available.  
toxicity (single exposure)  
Specific target organ systemic No information available.  
toxicity (repeated exposure)  
Aspiration hazard No information available.

**Numerical measures of toxicity - Product Information**

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 4618 mg/kg  
ATEmix (dermal) 11940 mg/kg  
ATEmix (inhalation-dust/mist) 5.4 mg/l  
Oral LD50 3759 mg/kg (rat) Estimated  
Dermal LD50 33898 mg/kg (rat) Estimated

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
XYLENE(PURE) 1330-20-7	N/A	30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50	3.82: 48 h water flea mg/L EC50 0.6: 48 h Gammarus lacustris mg/L LC50
ETHYL ACETATE 141-78-6	N/A	220 - 250: 96 h Pimephales promelas mg/L LC50 flow-through 484: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 352 - 500: 96 h Oncorhynchus mykiss mg/L LC50 semi-static	560: 48 h Daphnia magna mg/L EC50 Static
ETHYLBENZENE 100-41-4	2.6 - 11.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 438: 96 h Pseudokirchneriella subcapitata mg/L EC50 4.6: 72 h Pseudokirchneriella subcapitata	9.1 - 15.6: 96 h Pimephales promelas mg/L LC50 static 9.6: 96 h Poecilia reticulata mg/L LC50 static 32: 96 h Lepomis macrochirus mg/L LC50 static 7.55 - 11: 96 h Pimephales promelas mg/L LC50 flow-through 4.2: 96 h	1.8 - 2.4: 48 h Daphnia magna mg/L EC50

	mg/L EC50	Oncorhynchus mykiss mg/L LC50 semi-static 11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static	
METHYL ISOBUTYL KETONE 108-10-1	400: 96 h Pseudokirchneriella subcapitata mg/L EC50	496 - 514: 96 h Pimephales promelas mg/L LC50 flow-through	170: 48 h Daphnia magna mg/L EC50

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
METHYL AMYL KETONE 110-43-0	1.98
XYLENE(PURE) 1330-20-7	3.15
ETHYL ACETATE 141-78-6	0.6
ETHYLBENZENE 100-41-4	3.118
METHYL ISOBUTYL KETONE 108-10-1	1.19

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Waste treatment methods**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261)

**US EPA Waste Number**

D001

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
XYLENE(PURE) 1330-20-7	N/A	Included in waste stream: F039	N/A	U239
ETHYL ACETATE 141-78-6	N/A	Included in waste stream: F039	N/A	U112
ETHYLBENZENE 100-41-4	N/A	Included in waste stream: F039	N/A	N/A
METHYL ISOBUTYL KETONE 108-10-1	N/A	Included in waste stream: F039	N/A	U161

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
XYLENE(PURE) 1330-20-7	Toxic Ignitable
ETHYL ACETATE 141-78-6	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable

**14. TRANSPORT INFORMATION**

**DOT**

UN-No

UN1263

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Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	149, B52, IB2, T4, TP1, TP8, TP28
Description	UN1263, Paint, 3, II, RQ
Emergency Response Guide Number	128

**TDG**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

**MEX**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

**ICAO**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

**IATA**

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

**IMDG/IMO**

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

**RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, 3, II

**ADR/RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, 3, II, (D/E)

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ADR/RID-Labels 3

**ADN**

Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Classification Code F1  
Special Provisions 163, 640C, 650  
Description UN1263, Paint, 3, II  
Hazard Labels 3  
Limited Quantity (LQ) 5 L  
Ventilation VE01

**15. REGULATORY INFORMATION**

**International Inventories**

TSCA Complies  
DSL/NDL Complies  
EINECS/ELINCS Complies  
ENCS Complies  
IECSC Complies  
KECL Complies  
PICCS Complies  
AICS Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List  
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
ENCS - Japan Existing and New Chemical Substances  
IECSC - China Inventory of Existing Chemical Substances  
KECL - Korean Existing and Evaluated Chemical Substances  
PICCS - Philippines Inventory of Chemicals and Chemical Substances  
AICS - Australian Inventory of Chemical Substances

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
XYLENE(PURE)	1330-20-7	1.0
ETHYLBENZENE	100-41-4	0.1

**SARA 311/312 Hazard Categories**

Acute Health Hazard Yes  
Chronic Health Hazard No  
Fire Hazard Yes  
Sudden Release of Pressure Hazard No  
Reactive Hazard No

**CAA (Clean Air Act)**

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
XYLENE(PURE)	1330-20-7	Present
ETHYLBENZENE	100-41-4	Present
METHYL ISOBUTYL KETONE	108-10-1	Present

**Clean Water Act**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21

and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
XYLENE(PURE)	100 lb	N/A	N/A	X
ETHYLBENZENE	1000 lb	X	X	X

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
ETHYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ
METHYL ISOBUTYL KETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

#### State Regulations

##### California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
TITANIUM DIOXIDE	13463-67-7	Carcinogen
ETHYLBENZENE	100-41-4	Carcinogen
METHYL ISOBUTYL KETONE	108-10-1	Carcinogen Developmental

#### U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
TITANIUM DIOXIDE	X	X	X	N/A	X
METHYL AMYL KETONE	X	X	X	N/A	N/A
XYLENE(PURE)	X	X	X	X	X
ETHYL ACETATE	X	X	X	N/A	N/A
ETHYLBENZENE	X	X	X	X	X
METHYL ISOBUTYL KETONE	X	X	X	X	N/A
BUTYL ACETATE	X	X	X	N/A	X

#### International Regulations

Mexico - Grade

Serious risk, Grade 3

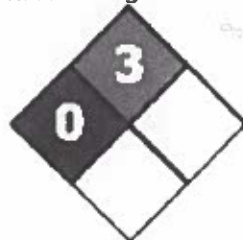
Chemical Name	Carcinogenic Status	Exposure Limits
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 150 ppm Mexico: STEL 655 mg/m <sup>3</sup>
ETHYL ACETATE	N/A	Mexico: TWA 400 ppm Mexico: TWA 1400 mg/m <sup>3</sup>
ETHYLBENZENE	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup>

		Mexico: STEL 125 ppm Mexico: STEL 545 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 205 mg/m <sup>3</sup> Mexico: STEL 75 ppm Mexico: STEL 307 mg/m <sup>3</sup>

## 16. OTHER INFORMATION

**NFPA**                      Health Hazard 0                      Flammability 3                      Instability 0                      Physical and Chemical Hazards -

NFPA Rating



**HMIS**                      Health Hazard 1 \*                      Flammability 3                      Physical Hazard 0                      Personal protection X

**Chronic Hazard Star Legend**

\* Chronic Health Hazard

Issuing Date: 10-Aug-2015

Revision Date: 10-Aug-2015

Revision Note

No information available

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

end



Issuing Date: 10-Aug-2015

Revision Date: 10-Aug-2015

Revision Number: 1

# SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: AXPB-34 Q

Product Name: CATALYST FOR H-SOLIDS PG-6-SERIES 1  
QUART

Hentzen Coatings, Inc.  
6937 West Mill Road, Milwaukee, WI 53218-1225

Company Phone Number: 1-414-353-4200

Emergency telephone number ChemTrec 1-800-424-9300

Recommended use of the chemical and restrictions on use

Industrial paint (Paint or Paint-Related), Restricted to  
professional users

## 2. HAZARDS IDENTIFICATION

### Classification

#### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Corrosion/Irritation	Category 2
Serious eye damage/eye irritation	Category 2
Germ Cell Mutagenicity	Category 1B
Carcinogenicity	Category 1B
Flammable Liquids	Category 2

### Label Elements

#### Emergency Overview

**DANGER**

#### Hazard Statements

Causes skin irritation  
Causes serious eye irritation  
May cause genetic defects  
May cause cancer  
Highly flammable liquid and vapor



Appearance Opaque

Physical state Liquid

Odor Solvent

#### Precautionary Statements - Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Wear eye/face protection  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/Bond container and receiving equipment  
Use explosion-proof electrical/ ventilating/ lighting/ equipment  
Use only non-sparking tools



Take precautionary measures against static discharge

#### **Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

If skin irritation occurs: Get medical advice/attention

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

#### **Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool

Store in accordance with local regulations

#### **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

#### **Hazards not otherwise classified (HNOC)**

#### **Other information**

- May be harmful if swallowed

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **Contains a known or suspected carcinogen**

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
TITANIUM DIOXIDE	13463-67-7	40% - 50%	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust
METHYL AMYL KETONE	110-43-0	10% - 20%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLENE(PURE)	1330-20-7	5% - 10%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
ETHYL ACETATE	141-78-6	1% - 5%	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>
ETHYLBENZENE	100-41-4	0% - 1%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	108-10-1	0% - 1%	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>
LIGHT AROMATIC PETROLEUM DISTILLATE	64742-95-6	0% - 1%	N/A	N/A

### **4. FIRST AID MEASURES**

#### **First Aid Measures**

##### **General advice**

If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.

##### **Eye Contact**

Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. If symptoms persist, call a physician.

##### **Skin Contact**

Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

##### **Inhalation**

Consult a physician if necessary. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

---

Ingestion	Do NOT induce vomiting.
Self-protection of the first aider	Use personal protective equipment as required.
Most important symptoms and effects, both acute and delayed	
Most Important Symptoms and Effects	No information available.
Indication of any immediate medical attention and special treatment needed	
Notes to physician	Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

### Specific hazards arising from the chemical

Extremely flammable.

### Explosion Data

**Sensitivity to Mechanical Impact** no data available.

**Sensitivity to Static Discharge** Yes.

### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** Use personal protective equipment as required. Remove all sources of ignition. Avoid breathing vapors or mists. Ventilate the area.

### Environmental Precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

### Methods and materials for containment and cleaning up

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Cleaning Up** Cover liquid spill with sand, earth or other noncombustible absorbent material. Pick up and transfer to properly labeled containers. Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** Avoid contact with eyes, skin and clothing. Wear protective gloves/protective clothing/eye protection/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not breathe vapor or mist. Do not eat, drink or smoke when using this product. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from heat, sparks and flame.

**Incompatible Products** None known based on information supplied.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters****Exposure Guidelines**

Chemical Name	ACGIH	OSHA	NIOSH IDLH
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
ETHYL ACETATE 141-78-6	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>	IDLH: 2000 ppm TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE 108-10-1	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m <sup>3</sup> STEL: 75 ppm STEL: 300 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

**Exposure controls**

**Engineering Measures** Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** Use personal protective equipment as required.

**Skin and Body Protection** Chemical resistant apron.

**Respiratory Protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	Liquid	Appearance	Opaque
Odor	Solvent.	Odor Threshold	No data available
pH	No data available	Flash Point	12 °F / -11 °C
Decomposition temperature	No data available	Boiling Point	170 °F / 77 °C
Melting Point / Melting Range	No data available	Freezing Point	No data available

Vapor Pressure @20°C (kPa)	No data available	Partition coefficient:	No data available
Vapor Density	No data available	Density	No data available
Bulk density	No data available	Specific Gravity	1.45
Evaporation Rate	No data available	Water solubility	No data available
Dynamic viscosity	No data available	Weight per Gallon (lbs/gal):	12.03
		Flammability Limits in Air	
		Upper	1.91 %
		Lower	0.29 %

## 10. STABILITY AND REACTIVITY

### Reactivity

No data available

### Chemical stability

Stable under recommended storage conditions.

### Conditions to Avoid

Extremes of temperature and direct sunlight.

### Incompatible Materials

None known based on information supplied.

### Hazardous Decomposition Products

None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

Product Information	The product has not been tested
Inhalation	There is no data for this product.
Eye Contact	There is no data for this product.
Skin Contact	There is no data for this product.
Ingestion	There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
TITANIUM DIOXIDE 13463-67-7	10000 mg/kg ( Rat )	N/A	N/A
METHYL AMYL KETONE 110-43-0	1600 mg/kg ( Rat )	12.6 mL/kg ( Rabbit )	2000 ppm ( Rat ) 4 h
XYLENE(PURE) 1330-20-7	3500 mg/kg ( Rat )	4350 mg/kg ( Rabbit )	29.08 mg/L ( Rat ) 4 h
ETHYL ACETATE 141-78-6	5620 mg/kg ( Rat )	18000 mg/kg ( Rabbit )	N/A
ETHYLBENZENE 100-41-4	3500 mg/kg ( Rat )	15400 mg/kg ( Rabbit )	17.2 mg/L ( Rat ) 4 h
METHYL ISOBUTYL KETONE 108-10-1	2080 mg/kg ( Rat )	3000 mg/kg ( Rabbit )	8.2 mg/L ( Rat ) 4 h

### Information on toxicological effects

Symptoms No information available.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.  
 MUTAGENIC EFFECTS No information available.  
 Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.



Chemical Name	ACGIH	IARC	NTP	OSHA
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	N/A	X

**Legend:**

Reproductive Toxicity	No information available.
Specific target organ systemic toxicity (single exposure)	No information available.
Specific target organ systemic toxicity (repeated exposure)	No information available.
Aspiration hazard	No information available.

**Numerical measures of toxicity - Product Information**

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	4618 mg/kg
ATEmix (dermal)	11940 mg/kg
ATEmix (inhalation-dust/mist)	5.4 mg/l
Oral LD50	3759 mg/kg (rat) Estimated
Dermal LD50	33898 mg/kg (rat) Estimated

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
XYLENE(PURE) 1330-20-7	N/A	30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50	3.82: 48 h water flea mg/L EC50 0.6: 48 h Gammarus lacustris mg/L LC50
ETHYL ACETATE 141-78-6	N/A	220 - 250: 96 h Pimephales promelas mg/L LC50 flow-through 484: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 352 - 500: 96 h Oncorhynchus mykiss mg/L LC50 semi-static	560: 48 h Daphnia magna mg/L EC50 Static
ETHYLBENZENE 100-41-4	2.6 - 11.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 438: 96 h Pseudokirchneriella subcapitata mg/L EC50 4.6: 72 h Pseudokirchneriella subcapitata	9.1 - 15.6: 96 h Pimephales promelas mg/L LC50 static 9.6: 96 h Poecilia reticulata mg/L LC50 static 32: 96 h Lepomis macrochirus mg/L LC50 static 7.55 - 11: 96 h Pimephales promelas mg/L LC50 flow-through 4.2: 96 h	1.8 - 2.4: 48 h Daphnia magna mg/L EC50

	mg/L EC50	Oncorhynchus mykiss mg/L LC50 semi-static 11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static	
METHYL ISOBUTYL KETONE 108-10-1	400: 96 h Pseudokirchneriella subcapitata mg/L EC50	496 - 514: 96 h Pimephales promelas mg/L LC50 flow-through	170: 48 h Daphnia magna mg/L EC50

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
METHYL AMYL KETONE 110-43-0	1.98
XYLENE(PURE) 1330-20-7	3.15
ETHYL ACETATE 141-78-6	0.6
ETHYLBENZENE 100-41-4	3.118
METHYL ISOBUTYL KETONE 108-10-1	1.19

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods****Waste treatment methods**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**US EPA Waste Number**

D001

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
XYLENE(PURE) 1330-20-7	N/A	Included in waste stream: F039	N/A	U239
ETHYL ACETATE 141-78-6	N/A	Included in waste stream: F039	N/A	U112
ETHYLBENZENE 100-41-4	N/A	Included in waste stream: F039	N/A	N/A
METHYL ISOBUTYL KETONE 108-10-1	N/A	Included in waste stream: F039	N/A	U161

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
XYLENE(PURE) 1330-20-7	Toxic Ignitable
ETHYL ACETATE 141-78-6	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable

**14. TRANSPORT INFORMATION****DOT**

UN-No

UN1263

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Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	149, B52, IB2, T4, TP1, TP8, TP28
Description	UN1263, Paint, 3, II, RQ
Emergency Response Guide Number	128

**TDG**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

**MEX**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

**ICAO**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

**IATA**

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

**IMDG/IMO**

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

**RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, 3, II

**ADR/RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, 3, II, (D/E)

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ADR/RID-Labels 3

**ADN**

Proper shipping name Paint  
 Hazard class 3  
 Packing Group II  
 Classification Code F1  
 Special Provisions 163, 640C, 650  
 Description UN1263, Paint, 3, II  
 Hazard Labels 3  
 Limited Quantity (LQ) 5 L  
 Ventilation VE01

**15. REGULATORY INFORMATION****International Inventories**

TSCA Complies  
 DSL/NDL Complies  
 EINECS/ELINCS Complies  
 ENCS Complies  
 IECSC Complies  
 KECL Complies  
 PICCS Complies  
 AICS Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
XYLENE(PURE)	1330-20-7	1.0
ETHYLBENZENE	100-41-4	0.1

**SARA 311/312 Hazard Categories**

Acute Health Hazard Yes  
 Chronic Health Hazard No  
 Fire Hazard Yes  
 Sudden Release of Pressure Hazard No  
 Reactive Hazard No

**CAA (Clean Air Act)**

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
XYLENE(PURE)	1330-20-7	Present
ETHYLBENZENE	100-41-4	Present
METHYL ISOBUTYL KETONE	108-10-1	Present

**Clean Water Act**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21)

and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
XYLENE(PURE)	100 lb	N/A	N/A	X
ETHYLBENZENE	1000 lb	X	X	X

#### **CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
ETHYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ
METHYL ISOBUTYL KETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

#### **State Regulations**

##### **California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
TITANIUM DIOXIDE	13463-67-7	Carcinogen
ETHYLBENZENE	100-41-4	Carcinogen
METHYL ISOBUTYL KETONE	108-10-1	Carcinogen Developmental

#### **U.S. State Right-to-Know Regulations**

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
TITANIUM DIOXIDE	X	X	X	N/A	X
METHYL AMYL KETONE	X	X	X	N/A	N/A
XYLENE(PURE)	X	X	X	X	X
ETHYL ACETATE	X	X	X	N/A	N/A
ETHYLBENZENE	X	X	X	X	X
METHYL ISOBUTYL KETONE	X	X	X	X	N/A
BUTYL ACETATE	X	X	X	N/A	X

#### **International Regulations**

##### **Mexico - Grade**

Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 150 ppm Mexico: STEL 655 mg/m <sup>3</sup>
ETHYL ACETATE	N/A	Mexico: TWA 400 ppm Mexico: TWA 1400 mg/m <sup>3</sup>
ETHYLBENZENE	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup>

		Mexico: STEL 125 ppm Mexico: STEL 545 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 205 mg/m <sup>3</sup> Mexico: STEL 75 ppm Mexico: STEL 307 mg/m <sup>3</sup>

**16. OTHER INFORMATION****NFPA**

Health Hazard 0

Flammability 3

Instability 0

Physical and Chemical  
Hazards -

NFPA Rating

**HMIS**

Health Hazard 1 \*

Flammability 3

Physical Hazard 0

Personal protection X

**Chronic Hazard Star Legend**

\* Chronic Health Hazard

**Issuing Date:**

10-Aug-2015

**Revision Date:**

10-Aug-2015

**Revision Note**

No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

end



# MATERIAL SAFETY DATA SHEET



*Your Chemical Solutions Provider*

<b>DATE ISSUED :</b>	10/9/2013
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MIL-C-81773C #17178 Gloss Silver Polyurethane

## **1. PRODUCT AND COMPANY INFORMATION**

**PRODUCT NAME:** MIL-C-81773C #17178 Gloss Silver Polyurethane

### **SELLERS INFORMATION**

Chemsol  
8423 Boettner Road  
Bridgewater, MI 48115  
**Phone:** (734)429-0033

### **24 HR. EMERGENCY TELEPHONE NUMBER**

**CHEMTREC (US Transportation):** 1(800)424-9300  
**CHEMTREC (International Transportation):** +1(202)483-7616

## **2. HAZARDS IDENTIFICATION**

### **EMERGENCY OVERVIEW**

**PHYSICAL APPEARANCE :** Liquid

**IMMEDIATE CONCERNS :** DANGER! Flammable liquid and vapor. May cause eye, skin and respiratory tract irritation. May cause asphyxiation, or brain, lung or other organ injury if inhaled, swallowed or absorbed by the skin.

### **POTENTIAL HEALTH EFFECTS**

**EYES :** Liquid is severely irritating to the eyes. High vapor concentrations are also irritating.

**SKIN :** Liquid is moderately irritating to the skin. Prolonged or repeated contact can result in drying of the skin which may result in skin irritation and dermatitis (rash). Liquid may be absorbed through the skin.

**INGESTION :** Ingestion may cause headache, dizziness, fatigue, and central nervous system depression along with gastrointestinal disturbances.

**INHALATION :** Vapors may be irritating to the nose, throat, and respiratory tract. Exposure to high vapor concentrations may cause central nervous system (CNS) depression. Aspiration of liquid may cause pneumonitis, pulmonary edema, and hemorrhaging.

**CHRONIC :** No chronic health concerns known.

**CARCINOGENICITY :** This material is not currently known to have carcinogenic properties.

**MUTAGENICITY :** This material is not known to have mutagenic effects on genetic material.

**IRRITANCY:** This material may cause irritation to the eyes, skin, and respiratory tract. Use correct PPE when handling this material.

### **REPRODUCTIVE TOXICITY**



## MIL-C-81773C #17178 Gloss Silver Polyurethane

**REPRODUCTIVE EFFECTS :** This material is not known to cause any reproductive system damage.

**TERATOGENIC EFFECTS :** This material is not known to contain any teratogenic substances.

### 3. COMPOSITION/CHEMICAL INFORMATION

Chemical Name	CAS Number	Weight %
*Methyl n-Amyl Ketone	110-43-0	25% to 50%
Aluminum	7429-90-5	20% to 25%
Polyester Resin Solids	NONE	10% to 15%
Acetic Acid Ethyl Ester	141-78-6	5% to 10%
*Synthetic Isoparaffinic Hydrocarbon	64742-48-9	5% to 10%
*Acetone	67-64-1	1% to 5%
*Methyl Ethyl Ketone	78-93-3	1% to 5%
*Butyl Acetate	123-86-4	1% to 5%

\* Toxic chemical subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

### 4. FIRST AID MEASURES

**EYES :** Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Seek medical aid if irritation persists.

**SKIN :** Flush skin with soap and water while removing contaminated clothing. If irritation occurs, seek immediate medical attention. Do not reuse clothing or shoes until thoroughly cleaned.

**INGESTION :** Do not induce vomiting, and seek immediate medical attention. Do not attempt to give any liquids if victim is unconscious.

**INHALATION :** Immediately remove victim to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Seek immediate medical attention.

**NOTES TO PHYSICIAN:** If the victim is a child, give no more than 1 glass of water and 15cc (1 tablespoon) syrup of ipecac. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage should be considered following intubation with a cuffed endotracheal tube.

### 5. FIRE FIGHTING MEASURES

**FLASH POINT AND METHOD :** 93 degrees Fahrenheit Tagliabue Closed Cup (TCC)

**FLAMMABLE LIMITS :** 1.7% to 12.8%

# MIL-C-81773C #17178 Gloss Silver Polyurethane

**AUTOIGNITION TEMPERATURE :** No data available.

**GENERAL HAZARD :** Carbon monoxide and unidentified organic compounds may be formed during combustion.

**EXTINGUISHING MEDIA :** Use water fog, "alcohol" foam, dry chemical, or CO2.

**FIRE FIGHTING PROCEDURES :** WARNING! Flammable Liquid. Clear the fire area of unprotected personnel. Do not enter confined fire space without full bunker gear; including a positive pressure NIOSH approved SCBA. Cool fire exposed containers with water. If water is used, fog nozzles are preferred

**EXPLOSION HAZARDS :** When heated above the flash point, this material emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mists or sprays may be flammable at temperatures below the flash point.

## 6. ACCIDENTAL RELEASE MEASURES

**GENERAL PROCEDURES :** WARNING. Flammable. Ventilate area of leak or spill for at least 24 hours or until it has been declared safe. Remove all sources of ignition. Stop the leak if there is no risk involved. Clean-up personnel require protective clothing and respiratory protection from vapors. Absorb liquid with inert material. Only specially trained or qualified personnel should handle the emergency.

## ENVIRONMENTAL PRECAUTIONS

**WATER SPILL :** Keep material out of storm sewers and ditches which lead to waterways.

**LAND SPILL :** Contact applicable authorities and determine applicable regulations based on MSDS information.

**AIR RELEASE :** Contact applicable authorities and determine applicable regulations based on MSDS information.

## 7. HANDLING AND STORAGE

**GENERAL PROCEDURES :** Keep away from heat, sparks, and flame. Surfaces that are hot may ignite liquid even in the absence of sparks or flame. Extinguish pilot lights, cigarettes, and turn off all other sources of ignition prior to use, and until all vapors are gone. Keep containers tightly closed and upright to prevent leakage.

**COMMENTS :** KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### EXPOSURE GUIDELINES :

#### OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

CHEMICAL NAME	EXPOSURE LIMITS	
	OSHA PEL	ACGIH TLV

## MIL-C-81773C #17178 Gloss Silver Polyurethane

		ppm	mg/m <sub>3</sub>	ppm	mg/m <sub>3</sub>
*Methyl n-Amyl Ketone	TWA	100	465	100	465
	STEL	NL	NL	NL	NL
Aluminum	TWA	N/A	15	N/A	10
	STEL	N/A	NL	N/A	NL
Acetic Acid Ethyl Ester	TWA	400	1400	400	1400
	STEL	NL	NL	NL	NL
*Synthetic Isoparaffinic Hydrocarbon	TWA	500	2900	350	1800
	STEL	NL	NL	NL	NL
*Acetone	TWA	1000	2400	250	590
	STEL	NL	NL	NL	NL
*Methyl Ethyl Ketone	TWA	200	590	200	590
	STEL	NL	NL	300	885
*Butyl Acetate	TWA	150	710	150	710
	STEL	NL	NL	200	950

### OSHA TABLE COMMENTS:

NL = Not Listed

Ca = "WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM."

**ENGINEERING CONTROLS:** Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

**SKIN:** Wear resistant gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

**RESPIRATORY:** If exposure may or does exceed occupational exposure limits (Section 8) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134, use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

**HYGIENIC WORK PRACTICES:** Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

**OTHER USE PRECAUTIONS:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**COMMENTS:** May be harmful or fatal if swallowed. May irritate body tissues. Use with adequate ventilation. Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE :** Liquid

**ODOR :** Typical paint odor.

## MIL-C-81773C #17178 Gloss Silver Polyurethane

**pH :** Not Applicable

**BOILING POINT :** 133 Degrees Fahrenheit to 244 Degrees Fahrenheit

**FREEZING POINT :** No data available

**VOLATILE ORGANIC COMPOUNDS:** 397 G/L (3.32 Lbs/Gal)

(VOC Theoretical – As Packaged)

**HAZARDOUS AIR POLLUTANTS (HAP's):** 23 G/L (0.19 Lbs/Gal)

(HAP's Theoretical – As Packaged)

**SOLUBILITY IN WATER :** Soluble in most organic solvents. Not soluble in water.

**EVAPORATION RATE :** No data available

**DENSITY :** 9.91 (Lbs/Gal)

### 10. STABILITY AND REACTIVITY

**STABLE :** Yes

**HAZARDOUS POLYMERIZATION :** Will not occur

**CONDITIONS TO AVOID :** Avoid heat, sparks, flame and contact with strong oxidizing agents. Prevent vapor accumulation.

**POLYMERIZATION :** Avoid heat, flame, and other sources of ignition.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon monoxide and unidentified organic compounds may be formed during combustion.

**INCOMPATIBLE MATERIALS :** Strong oxidizers.

### 11. TOXICOLOGICAL INFORMATION

**GENERAL COMMENTS:** None identified.

### 12. ECOLOGICAL INFORMATION

**ECOTOXICOLOGICAL INFORMATION:** Keep out of waterways.

### 13. DISPOSAL INFORMATION

**DISPOSAL METHOD:** This material is a US EPA defined ignitable hazardous waste. The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

**EMPTY CONTAINER:** KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

**RCRA/EPA WASTE INFORMATION:** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

# MIL-C-81773C #17178 Gloss Silver Polyurethane

## 14. TRANSPORT INFORMATION

### DOT (DEPARTMENT OF TRANSPORTATION)

**PROPER SHIPPING NAME :** UN1263, Paint, Class 3, PG III  
(UN#, Proper Shipping Name, Class, Packing Group)

\*\*\* The manufacturer verifies that the material was supplied and shipped in the proper packages in accordance with DOT and federal regulations that are applicable to the mode of transportation selected. The shipper must verify that the packaging supplied is acceptable to be re-shipped in per the federal regulations applicable to the mode of transportation for re-shipment. Regulations may change depending on mode of transportation selected.\*\*\*

## 15. REGULATORY INFORMATION

### SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

**311/312 HAZARD CATEGORIES:** This product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard, and a fire hazard.

**FIRE :** Yes                      **PRESSURE GENERATING :** No

**REACTIVITY :** No            **ACUTE :** Yes    **CHRONIC :** Yes

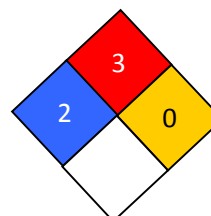
**313 REPORTABLE INGREDIENTS:** To the best of our knowledge, this product is not listed as a toxic chemical.

### 302/304 EMERGENCY PLANNING

**EMERGENCY PLAN:** To the best of our knowledge, this material is not listed as an extremely hazardous substance.

## 16. OTHER INFORMATION

NFPA CODES



### HMIS RATING

Health :	2
Flammability :	3
Reactivity :	0
Personal Protection :	G

**MANUFACTURER DISCLAIMER :** To the best of Chemsol's knowledge, all information, recommendations, and suggestions appearing herein concerning this product are taken from sources or based upon data believed to be reliable. Although reasonable care has been taken in the preparation of this information, Chemsol extends no warranties or guarantees, express or implied, makes no representations and assumes no responsibility as to the accuracy, reliability or completeness of the information presented. Chemsol assumes no liability arising out of the use of the product by others.

The conditions or methods of handling, storage, use and disposal of the product are beyond Chemsol's control. The information provided herein may not be valid for this product if it is used in combination with any other materials or process. It is the user's responsibility to determine the suitability of the product, review the information provided herein, assess the safety and toxicity of the product and to comply with all applicable laws and regulations. For this and other reasons, Chemsol does not assume responsibility and expressly disclaims liability for any loss damage or

## **MIL-C-81773C #17178 Gloss Silver Polyurethane**

expense arising out of or in any way connected with the handling, storage, use or disposal of the product.



## SAFETY DATA SHEET

### Fluid Resistant Epoxy Primer 463-12-8

#### Section 1. Identification

**GHS product identifier** : Fluid Resistant Epoxy Primer 463-12-8  
**Other means of identification** : 37052/065724 Epoxy primer 37052 green

**Relevant identified uses of the substance or mixture and uses advised against**  
: FOR INDUSTRIAL USE ONLY

**Supplier/Manufacturer** : Akzo Nobel Coatings, Inc.  
1 East Water Street  
Waukegan, IL 60085  
USA  
Tel. 1 847 623 4200  
Email: customer.  
service@akzonobel.com

**Canadian Supplier** : Akzo Nobel Coatings Ltd.  
110 Woodbine Downs Blvd.  
Unit #4 Etobicoke, Ontario  
Canada M9W 5S6  
+1 (800) 618-1010

**Emergency telephone number** : CHEMTREC +1 (800) 424-9300 (Inside the US)  
CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

**Date of issue / Date of revision** : 11 August 2020

**Safety Data Sheet Version** : 5.01

**Date of printing** : 11 August 2020

Akzo Nobel Coatings Inc. encourages and expects you to read and understand this entire MSDS, as there is important information throughout the document. Further, Akzo Nobel Coatings Inc. expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information contained in this MSDS and any other information regarding hazards and safety; 2) Furnish this same information to each of its customers for the product; 3) Request its customers to notify their employees, customers, and other users of the product of this information; and 4) Notify its employees, agents, contractors, and others that the precautions identified for this product and any other products with which mixtures may be created are transferable and cumulative to the mixture.

#### Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 2  
SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
CARCINOGENICITY - Category 1A



## Section 2. Hazards identification

### GHS label elements

#### Hazard pictograms



#### Signal word

: Danger

#### Hazard statements

: Highly flammable liquid and vapor.  
Causes serious eye irritation.  
Causes skin irritation.  
May cause cancer.

### Precautionary statements

#### Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Keep container tightly closed. Wash hands thoroughly after handling.

#### Response

: IF exposed or concerned: Get medical attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

#### Storage

: Store locked up. Store in a well-ventilated place. Keep cool.

#### Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

#### Hazards not otherwise classified

: None known.

## Section 3. Composition/information on ingredients

### Substance/mixture

: Mixture

Ingredient name	%	CAS number
Talc , not containing asbestiform fibres	10 - 15	14807-96-6
Mica-group minerals	5 - 10	12001-26-2
butanone	5 - 10	78-93-3
Methyl isobutyl ketone	5 - 10	108-10-1
xylene	5 - 10	1330-20-7
strontium chromate	5 - 10	7789-06-2
n-butyl acetate	5 - 10	123-86-4
butan-1-ol	1 - 5	71-36-3
titanium dioxide	1 - 5	13463-67-7
ethylbenzene	1 - 5	100-41-4
Chlorite-group minerals	1 - 5	1318-59-8
barium chromate	0 - 1	10294-40-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

### Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation.
- Ingestion** : No known significant effects or critical hazards.

##### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness
- Ingestion** : No specific data.

## Section 4. First aid measures

### Indication of immediate medical attention and special treatment needed, if necessary

- |                                   |   |
|-----------------------------------|---|
| <b>Notes to physician</b>         | : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |
| <b>Specific treatments</b>        | : No specific treatment.  |
| <b>Protection of first-aiders</b> | : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. |

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
metal oxide/oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

## Section 6. Accidental release measures

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Talc , not containing asbestiform fibres	<b>NIOSH REL (United States, 10/2016).</b> TWA: 2 mg/m <sup>3</sup> 10 hours. Form: Respirable fraction <b>ACGIH TLV (United States, 3/2016).</b> TWA: 2 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction
Mica-group minerals	<b>ACGIH TLV (United States, 3/2016).</b> TWA: 3 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction <b>NIOSH REL (United States, 10/2016).</b> TWA: 3 mg/m <sup>3</sup> 10 hours. Form: Respirable fraction <b>OSHA PEL Z3 (United States, 6/2016).</b> TWA: 20 mppcf 8 hours.
butanone	<b>ACGIH TLV (United States, 3/2016).</b> STEL: 885 mg/m <sup>3</sup> 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m <sup>3</sup> 8 hours. TWA: 200 ppm 8 hours. <b>NIOSH REL (United States, 10/2016).</b> STEL: 885 mg/m <sup>3</sup> 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m <sup>3</sup> 10 hours. TWA: 200 ppm 10 hours. <b>OSHA PEL (United States, 6/2016).</b> TWA: 590 mg/m <sup>3</sup> 8 hours. TWA: 200 ppm 8 hours.
Methyl isobutyl ketone	<b>ACGIH TLV (United States, 3/2018).</b> STEL: 75 ppm 15 minutes. TWA: 20 ppm 8 hours. <b>NIOSH REL (United States, 10/2016).</b> STEL: 300 mg/m <sup>3</sup> 15 minutes. STEL: 75 ppm 15 minutes. TWA: 205 mg/m <sup>3</sup> 10 hours. TWA: 50 ppm 10 hours. <b>OSHA PEL (United States, 5/2018).</b> TWA: 410 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
xylene	<b>ACGIH TLV (United States, 3/2016).</b> STEL: 651 mg/m <sup>3</sup> 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours. <b>OSHA PEL (United States, 6/2016).</b> TWA: 435 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
strontium chromate	<b>ACGIH TLV (United States, 3/2016).</b>



## Section 8. Exposure controls/personal protection

### n-butyl acetate

TWA: 0.0005 mg/m<sup>3</sup>, (measured as Cr) 8 hours.

OSHA PEL Z2 (United States, 2/2013).

CEIL: 1 mg/10m<sup>3</sup>

OSHA PEL (United States, 6/2016).

TWA: 0.005 mg/m<sup>3</sup>, (as Cr) 8 hours.

NIOSH REL (United States, 10/2016).

TWA: 0.0002 mg/m<sup>3</sup>, (as CR) 8 hours.

NIOSH REL (United States, 10/2016).

STEL: 950 mg/m<sup>3</sup> 15 minutes.

STEL: 200 ppm 15 minutes.

TWA: 710 mg/m<sup>3</sup> 10 hours.

TWA: 150 ppm 10 hours.

OSHA PEL (United States, 6/2016).

TWA: 710 mg/m<sup>3</sup> 8 hours.

TWA: 150 ppm 8 hours.

ACGIH TLV (United States, 3/2017).

STEL: 150 ppm 15 minutes.

TWA: 50 ppm 8 hours.

### butan-1-ol

ACGIH TLV (United States, 3/2016).

TWA: 20 ppm 8 hours.

NIOSH REL (United States, 10/2016).

Absorbed through skin.

CEIL: 150 mg/m<sup>3</sup>

CEIL: 50 ppm

OSHA PEL (United States, 6/2016).

TWA: 300 mg/m<sup>3</sup> 8 hours.

TWA: 100 ppm 8 hours.

### titanium dioxide

OSHA PEL (United States, 6/2016).

TWA: 15 mg/m<sup>3</sup> 8 hours. Form: Total dust

ACGIH TLV (United States, 3/2016).

TWA: 10 mg/m<sup>3</sup> 8 hours.

ACGIH TLV (United States, 3/2017).

TWA: 20 ppm 8 hours.

NIOSH REL (United States, 10/2016).

STEL: 545 mg/m<sup>3</sup> 15 minutes.

STEL: 125 ppm 15 minutes.

TWA: 435 mg/m<sup>3</sup> 10 hours.

TWA: 100 ppm 10 hours.

OSHA PEL (United States, 6/2016).

TWA: 435 mg/m<sup>3</sup> 8 hours.

TWA: 100 ppm 8 hours.

### ethylbenzene

### Chlorite-group minerals

### barium chromate

None.

OSHA PEL Z2 (United States, 2/2013).

CEIL: 1 mg/10m<sup>3</sup>

ACGIH TLV (United States, 3/2016).

TWA: 0.01 mg/m<sup>3</sup>, (measured as Cr) 8 hours.

Form: Insoluble

OSHA PEL (United States, 6/2016).

TWA: 0.005 mg/m<sup>3</sup>, (as Cr) 8 hours.

NIOSH REL (United States, 10/2016).

TWA: 0.0002 mg/m<sup>3</sup>, (as CR) 8 hours.

## Section 8. Exposure controls/personal protection

- |   |   |
|---|---|
| <b>Appropriate engineering controls</b> | : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. |
| <b>Environmental exposure controls</b>  | : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.  |

### Individual protection measures

- |                         |   |
|-------------------------|---|
| <b>Hygiene measures</b> | : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. |
|-------------------------|---|

- |                            |  |
|----------------------------|--|
| <b>Eye/face protection</b> | : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. |
|----------------------------|--|

### Skin protection

- |                               |  |
|-------------------------------|--|
| <b>Hand protection</b>        | : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. |
| <b>Body protection</b>        | : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.  |
| <b>Other skin protection</b>  | : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.  |
| <b>Respiratory protection</b> | : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.   |

## Section 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	: Liquid.	
<b>Color</b>	: Green.	
<b>Odor</b>	: Typical.	
<b>Odor threshold</b>	: Not available.	
<b>pH</b>	: Not available.	
<b>Melting/freezing point</b>	: Not available.	
<b>Boiling point</b>	: 80°C (176°F)	
<b>boiling range</b>	: Not available.	
<b>Flash point</b>	: Closed cup: 4°C (39.2°F)	
<b>Evaporation rate</b>	: Not available.	
<b>Flammability (solid, gas)</b>	: Not available.	
<b>Upper/lower flammability or explosive limits</b>		
	Upper: : Not determined.	
	Lower: : Not determined.	
<b>Vapor pressure</b>	: Not available.	
<b>Vapor density</b>	: Not available.	
<b>Relative density</b>	: 1.291	
<b>Density</b>	: 10.77 lbs/gal	1.291 g/cm <sup>3</sup>
<b>Solubility</b>	: Not available.	
<b>Solubility in water</b>	: Not available.	
<b>Partition coefficient: n-octanol/water</b>	: Not available.	
<b>Auto-ignition temperature</b>	: Not available.	
<b>Decomposition temperature</b>	: Not available.	
<b>Viscosity</b>	: Kinematic (room temperature): 1.94 cm <sup>2</sup> /s (194 cSt)	
<b>Weight Volatiles</b>	: 36.76% (w/w)	
<b>Volume Volatiles</b>	: 56.39 % (v/v)	
<b>Weight Solids</b>	: 63.24 % (w/w)	
<b>Volume Solids</b>	: 43.61 % (v/v)	
<b>Regulatory VOC</b>	: 4.0 lbs/gal	475 g/l minus water and exempt solvents
<b>VOC Actual</b>	: 4.0 lbs/gal	475 g/l

## Section 10. Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.



## Section 10. Stability and reactivity

**Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**Incompatible materials** : Reactive or incompatible with the following materials:  
oxidizing materials

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
butanone	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-
Methyl isobutyl ketone	LD50 Oral	Rat	2080 mg/kg	-
xylene	LD50 Oral	Rat	4300 mg/kg	-
strontium chromate	LD50 Oral	Rat	3118 mg/kg	-
n-butyl acetate	LC50 Inhalation Vapor	Rat	390 ppm	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10768 mg/kg	-
butan-1-ol	LD50 Dermal	Rabbit	3400 mg/kg	-
	LD50 Oral	Rat	790 mg/kg	-
ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Talc , not containing asbestiform fibres	Skin - Mild irritant	Human	-	72 hours 300 Micrograms Intermittent	-
butanone	Skin - Mild irritant	Rabbit	-	24 hours 14 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
Methyl isobutyl ketone	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters	-
	Eyes - Severe irritant	Rabbit	-	40 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
xylene	Eyes - Mild irritant	Rabbit	-	87 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	100 Percent	-
n-butyl acetate	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-

## Section 11. Toxicological information

butan-1-ol	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
	Eyes - Severe irritant	Rabbit	-	0.005 Milliliters	-
titanium dioxide	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Mild irritant	Human	-	72 hours 300 Micrograms	-
ethylbenzene	Eyes - Severe irritant	Rabbit	-	Intermittent 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Classification

Product/ingredient name	OSHA	IARC	NTP
Talc , not containing asbestiform fibres	-	3	-
Methyl isobutyl ketone	-	2B	-
xylene	-	3	-
strontium chromate	+	1	Known to be a human carcinogen.
titanium dioxide	-	2B	-
ethylbenzene	-	2B	-
barium chromate	+	1	Known to be a human carcinogen.

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
n-butyl acetate	Category 3	Not applicable.	Narcotic effects

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

**Section 11. Toxicological information**

Name	Result
ethylbenzene	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Not available.

**Potential acute health effects**

**Eye contact** : Causes serious eye irritation.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : Causes skin irritation.  
**Ingestion** : No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness  
**Inhalation** : No specific data.  
**Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
**Ingestion** : No specific data.

**Delayed and immediate effects and also chronic effects from short and long term exposure****Short term exposure**

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

**Long term exposure**

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

**Potential chronic health effects**

Not available.

**General** : No known significant effects or critical hazards.  
**Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : No known significant effects or critical hazards.

**Numerical measures of toxicity****Acute toxicity estimates**

## Section 11. Toxicological information

Route	ATE value
Oral	2837.3 mg/kg
Dermal	40496.2 mg/kg

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
butanone	Acute EC50 >500000 µg/l Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 5091000 to 6440000 µg/l Fresh water	Daphnia - Daphnia magna - Larvae	48 hours
Methyl isobutyl ketone	Acute LC50 5600 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
	Acute LC50 505000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 168 mg/l Fresh water	Fish - Pimephales promelas - Embryo	33 days
xylene	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
n-butyl acetate	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours
butan-1-ol	Acute LC50 62000 µg/l	Fish - Danio rerio	96 hours
	Acute EC50 1983000 to 2072000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
ethylbenzene	Acute LC50 1910000 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 2930 to 4400 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 40000 µg/l Marine water	Crustaceans - Cancer magister - Zoea	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
butanone	0.3	-	low
Methyl isobutyl ketone	1.9	-	low
xylene	3.12	8.1 to 25.9	low
n-butyl acetate	2.3	-	low
butan-1-ol	1	-	low
ethylbenzene	3.6	-	low

## Section 12. Ecological information

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

Other adverse effects : No known significant effects or critical hazards.








## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

**Special precautions for user** : Please Note: The information provided in section 14 is based on a bulk package shipment via ground transport in North America. All shippers are responsible for ensuring the proper transportation classification and package/container requirements are followed for the relevant mode of transport.

**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT
Transport hazard class(es)	3 	3  	3 	3  	3 

## Section 14. Transport information

Packing group	II	II	II	II	II
Environmental hazards	No.	Yes.	No.	Yes.	No.

## Section 15. Regulatory information

### U.S. Federal regulations

United States inventory (TSCA 8b): All components are listed or exempted.

#### SARA 311/312

Classification : Fire hazard  
Immediate (acute) health hazard  
Delayed (chronic) health hazard

#### SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Methyl isobutyl ketone	108-10-1	5 - 10
	xylene	1330-20-7	5 - 10
	strontium chromate	7789-06-2	5 - 10
	butan-1-ol	71-36-3	1 - 5
	ethylbenzene	100-41-4	1 - 5
	barium chromate	10294-40-3	0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

#### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Methyl isobutyl ketone	Yes.	No.	No.	No.
strontium chromate	Yes.	Yes.	No.	No.
titanium dioxide	Yes.	No.	No.	No.
ethylbenzene	Yes.	No.	No.	No.
barium chromate	Yes.	Yes.	No.	No.
toluene	No.	Yes.	No.	7000 µg/day (ingestion)
carbon black, respirable powder	Yes.	No.	No.	No.

### International lists

#### National inventory

Australia : All components are listed or exempted.  
Canada : At least one component is not listed.  
China : All components are listed or exempted.



## Section 15. Regulatory information

Europe	: At least one component is not listed.
Japan	: <b>Japan inventory (ENCS):</b> At least one component is not listed. Japan inventory (ISHL): At least one component is not listed.
Malaysia	: At least one component is not listed.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Turkey	: At least one component is not listed.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health	* 2
Flammability	3
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

### National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### History

Date of issue/Date of revision : 11 August 2020

Version : 5.01

MSDS # : A47556

0008

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## Section 16. Other information

**Key to abbreviations** : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.





Gray Teflon



## SAFETY DATA SHEET

Issuing Date: 22-May-2015

Revision Date: 20-Jul-2015

Revision Number: 0.1

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: AXTS-1-G1Q

Product Name: TEFLON GRAY TOPCOAT BAC 707 1QT/KIT

Hentzen Coatings, Inc.

6937 West Mill Road, Milwaukee, WI 53218-1225

Company Phone Number: 1-414-353-4200

Emergency telephone number ChemTrec 1-800-424-9300

Recommended use of the chemical and restrictions on use Industrial paint (Paint or Paint-Related), Restricted to professional users

### 2. HAZARDS IDENTIFICATION

#### Classification

#### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 3
Carcinogenicity	Category 1A
Flammable Liquids	Category 2

#### Label Elements

#### Emergency Overview

#### DANGER

#### Hazard Statements

Toxic if swallowed

May cause cancer

Highly flammable liquid and vapor



Appearance Opaque

Physical state Liquid

Odor Solvent

#### Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/Bond container and receiving equipment

Use explosion-proof electrical/ ventilating/ lighting/ equipment

Use only non-sparking tools

Take precautionary measures against static discharge

#### Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

IF ON SKIN (or hair) Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
 IF SWALLOWED Immediately call a POISON CENTER or doctor/physician  
 Rinse mouth  
 In case of fire Use CO2, dry chemical, or foam for extinction

**Precautionary Statements - Storage**

Store in a well-ventilated place Keep cool  
 Store in accordance with local regulations

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)****Other information****3. COMPOSITION/INFORMATION ON INGREDIENTS****Contains a known or suspected carcinogen**

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990 See Section 15 for list of HAPS

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
TITANIUM DIOXIDE	13463-67-7	20% - 30%	TWA: 10 mg/m <sup>3</sup>	TVWA: 15 mg/m <sup>3</sup> total dust
METHYL AMYL KETONE	110-43-0	10% - 20%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
BUTYL ACETATE	123-86-4	5% - 10%	STEL: 200 ppm TWA: 150 ppm	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup>
BUTYL ACETATE	123-86-4	1% - 5%	STEL: 200 ppm TWA: 150 ppm	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup>
CRISTOBLITE CRYSTALLINE SILICA	14464-46-1	0% - 1%	TWA: 0.025 mg/m <sup>3</sup> respirable fraction	$\cdot \frac{(1/2)(30)}{(\%SiO_2 + 2)}$ mg/m <sup>3</sup> TWA total dust $\cdot \frac{(1/2)(250)}{(\%SiO_2 + 5)}$ mppcf TWA respirable fraction $\cdot \frac{(1/2)(10)}{(\%SiO_2 + 2)}$ mg/m <sup>3</sup> TWA respirable fraction
ETHYLBENZENE	100-41-4	0% - 1%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>

**4. FIRST AID MEASURES****First Aid Measures**

General advice	Immediate medical attention is required Show this safety data sheet to the doctor in attendance
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids Consult a physician
Skin Contact	Wash off immediately with plenty of water
Inhalation	Remove to fresh air
Ingestion	Clean mouth with water and afterwards drink plenty of water.
Self-protection of the first aider	Remove all sources of ignition
Most important symptoms and effects, both acute and delayed	

**Most Important Symptoms and Effects** No information available.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

### Specific hazards arising from the chemical

Extremely flammable

### Explosion Data

**Sensitivity to Mechanical Impact** no data available.

**Sensitivity to Static Discharge** Yes.

### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

#### **Personal Precautions**

Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment as required. Avoid breathing vapors or mists. Ventilate the area.

### Environmental Precautions

#### **Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

### Methods and materials for containment and cleaning up

#### **Methods for Containment**

Prevent further leakage or spillage if safe to do so.

#### **Methods for Cleaning Up**

Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

#### **Advice on safe handling**

Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use explosion-proof electrical (ventilation and lighting) equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep away from heat, sparks and flame.

**Incompatible Products** None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

### Exposure Guidelines

Chemical Name	ACGIH	OSHA	NIOSH IDLH
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
BUTYL ACETATE 123-86-4	STEL: 200 ppm TWA: 150 ppm	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup>	IDLH: 1700 ppm TWA: 150 ppm TWA: 710 mg/m <sup>3</sup> STEL: 200 ppm STEL: 950 mg/m <sup>3</sup>
ALUMINUM OXIDE 1344-28-1	TWA: 1 mg/m <sup>3</sup> respirable fraction	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction	
BUTYL ACETATE 123-86-4	STEL: 200 ppm TWA: 150 ppm	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup>	IDLH: 1700 ppm TWA: 150 ppm TWA: 710 mg/m <sup>3</sup> STEL: 200 ppm STEL: 950 mg/m <sup>3</sup>
CRISTOBLITE CRYSTALLINE SILICA 14464-46-1	TWA: 0.025 mg/m <sup>3</sup> respirable fraction	(1/2)(30)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA total dust (1/2)(250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (1/2)(10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction	IDLH: 25 mg/m <sup>3</sup> respirable dust TWA: 0.05 mg/m <sup>3</sup> respirable dust
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
ALUMINUM OXIDE 1344-28-1	TWA: 1 mg/m <sup>3</sup> respirable fraction	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction	
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

### Exposure controls

**Engineering Measures** Showers  
Eyewash stations  
Ventilation systems

### Individual protection measures, such as personal protective equipment

**Eye/Face Protection** If splashes are likely to occur, wear safety glasses with side-shields.

**Skin and Body Protection** Chemical resistant apron.

**Respiratory Protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene Measures** Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work

area and clothing is recommended.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	Appearance	Opaque
Odor	Solvent	Odor Threshold	No data available
pH	No data available	Flash Point	12 °F / -11 °C
Decomposition temperature	No data available	Boiling Point	171 °F / 77 °C
Melting Point / Melting Range	No data available	Freezing Point	No data available
Vapor Pressure @20°C (kPa)	No data available	Partition coefficient:	No data available
Vapor Density	No data available	Density	No data available
Bulk density	No data available	Specific Gravity	1.34
Evaporation Rate	No data available	Water solubility	No data available
Dynamic viscosity	No data available	Weight per Gallon (lbs/gal):	11.14
		Flammability Limits in Air	
		Upper	2.52 %
		Lower	0.44 %

## 10. STABILITY AND REACTIVITY

### Reactivity

No data available

### Chemical stability

Stable under recommended storage conditions.

### Conditions to Avoid

Extremes of temperature and direct sunlight

### Incompatible Materials

None known based on information supplied.

### Hazardous Decomposition Products

None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

Product Information	The product has not been tested
Inhalation	There is no data for this product
Eye Contact	There is no data for this product
Skin Contact	There is no data for this product
Ingestion	There is no data for this product

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
TITANIUM DIOXIDE 13463-67-7	10000 mg/kg ( Rat )	N/A	N/A
METHYL AMYL KETONE 110-43-0	1600 mg/kg ( Rat )	12.6 mL/kg ( Rabbit )	2000 ppm ( Rat ) 4 h
BUTYL ACETATE 123-86-4	14.13 mg/kg ( Rat )	17600 mg/kg ( Rabbit )	390 ppm ( Rat ) 4 h
ALUMINUM OXIDE 1344-28-1	5000 mg/kg ( Rat )	N/A	N/A
BUTYL ACETATE 123-86-4	14.13 mg/kg ( Rat )	17600 mg/kg ( Rabbit )	390 ppm ( Rat ) 4 h
XYLENE(PURE) 1330-20-7	3500 mg/kg ( Rat )	4350 mg/kg ( Rabbit )	29.08 mg/L ( Rat ) 4 h

ALUMINUM OXIDE 1344-28-1	5000 mg/kg ( Rat )	N/A	N/A
ETHYLBENZENE 100-41-4	3500 mg/kg ( Rat )	15400 mg/kg ( Rabbit )	17.2 mg/L ( Rat ) 4 h

**Information on toxicological effects**

**Symptoms** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization** No information available

**MUTAGENIC EFFECTS** No information available

**Carcinogenicity** This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B)

Chemical Name	ACGIH	IARC	NTP	OSHA
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
CRISTOBLITE CRYSTALLINE SILICA 14464-46-1	A2	Group 1	N/A	X
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X

**Legend:**

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

**Reproductive Toxicity** No information available

**Specific target organ systemic** No information available

**toxicity (single exposure)** No information available

**Specific target organ systemic** No information available

**toxicity (repeated exposure)** No information available

**Target Organ Effects** Central nervous system (CNS), Eyes, Lungs, Peripheral Nervous System (PNS),

Respiratory system, Skin

**Aspiration hazard** No information available

**Numerical measures of toxicity - Product Information**

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 64 mg/kg

ATEmix (dermal) 29107 mg/kg

ATEmix (inhalation-dust/mist) 5.4 mg/l

Oral LD50 7893 mg/kg (rat) Estimated

Dermal LD50 44042 mg/kg (rat) Estimated

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
METHYL AMYL KETONE 110-43-0	N/A	126 - 137; 96 h Pimephales promelas mg/L LC50 flow-through	N/A
BUTYL ACETATE	674.7; 72 h Desmodesmus	100; 96 h Lepomis macrochirus	N/A

123-86-4	subspicatus mg/L EC50	mg/L LC50 static 17 - 19: 96 h Pimephales promelas mg/L LC50 flow-through	
BUTYL ACETATE 123-86-4	674.7: 72 h Desmodesmus subspicatus mg/L EC50	100: 96 h Lepomis macrochirus mg/L LC50 static 17 - 19: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
XYLENE(PURE) 1330-20-7	N/A	30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 2,661 - 4,093: 96 h Oncorhynchus mykiss mg/L LC50 static 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50	3.82: 48 h water flea mg/L EC50 0.6: 48 h Gammarus lacustris mg/L LC50
ETHYLBENZENE 100-41-4	2.6 - 11.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 438: 96 h Pseudokirchneriella subcapitata mg/L EC50 4.6: 72 h Pseudokirchneriella subcapitata mg/L EC50	9.1 - 15.6: 96 h Pimephales promelas mg/L LC50 static 9.6: 96 h Poecilia reticulata mg/L LC50 static 32: 96 h Lepomis macrochirus mg/L LC50 static 7.55 - 11: 96 h Pimephales promelas mg/L LC50 flow-through 4.2: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static	1.8 - 2.4: 48 h Daphnia magna mg/L EC50

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
METHYL AMYL KETONE 110-43-0	1.98
BUTYL ACETATE 123-86-4	1.81
BUTYL ACETATE 123-86-4	1.81
ETHYLBENZENE 100-41-4	3 118

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods****Waste treatment methods**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**US EPA Waste Number**D001  
U220 U140 U239 U019

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
XYLENE(PURE)	N/A	Included in waste stream:	N/A	U239



1330-20-7		F039		
ETHYLBENZENE 100-41-4	N/A	Included in waste stream F039	N/A	N/A

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
BUTYL ACETATE 123-86-4	Toxic
BUTYL ACETATE 123-86-4	Toxic
XYLENE(PURE) 1330-20-7	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable

#### 14. TRANSPORT INFORMATION

##### DOT

UN-No UN1263  
 Proper shipping name Paint  
 Hazard class 3  
 Packing Group II  
 Special Provisions 149 B52 IB2, T4, TP1, TP8, TP28  
 Description UN1263, Paint, 3, II, RQ  
 Emergency Response Guide Number 128

##### TDG

UN-No UN1263  
 Proper shipping name Paint  
 Hazard class 3  
 Packing Group II  
 Description UN1263, Paint, 3, II

##### MEX

UN-No UN1263  
 Proper shipping name Paint  
 Hazard class 3  
 Packing Group II  
 Description UN1263, Paint, 3, II

##### ICAO

UN-No UN1263  
 Proper shipping name Paint  
 Hazard class 3  
 Packing Group II  
 Special Provisions A3, A72  
 Description UN1263 Paint, 3, II

##### ICAO

UN-No UN1263  
 Proper shipping name Paint  
 Hazard class 3  
 Packing Group II  
 Special Provisions A3, A72  
 Description UN1263, Paint, 3, II

##### IMDG/IMO

UN-No UN1263

Proper shipping name	Paint
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163
Description	UN1263, Paint, 3, II

**RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, 3, II

**ADR/RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650
Description	UN1263, Paint, 3, II, (D/E)
ADR/RID-Labels	3

**ADN**

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, 3, II
Limited Quantity (LQ)	5 L
Ventilation	VE01

<b>15. REGULATORY INFORMATION</b>
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**International Inventories**

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
ALUMINUM OXIDE	1344-28-1	1 0
ETHYLBENZENE	100-41-4	0 1

**SARA 311/312 Hazard Categories**

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

**CAA (Clean Air Act)**

This product contains the following HAPs

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
ETHYLBENZENE	100-41-4	Present

**Clean Water Act**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
BUTYL ACETATE	5000 lb	N/A	N/A	X
BUTYL ACETATE	5000 lb	N/A	N/A	X
XYLENE(PURE)	100 lb	N/A	N/A	X
ETHYLBENZENE	1000 lb	X	X	X

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ

**State Regulations****California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
TITANIUM DIOXIDE	13463-67-7	Carcinogen
ETHYLBENZENE	100-41-4	Carcinogen

**U.S. State Right-to-Know Regulations**

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
TITANIUM DIOXIDE	X	X	X	N/A	X
METHYL AMYL KETONE	X	X	X	N/A	N/A
BUTYL ACETATE	X	X	X	N/A	N/A
ALUMINUM OXIDE	X	X	X	N/A	N/A
BUTYL ACETATE	X	X	X	N/A	X
CRISTOBLITE	X	X	X	X	N/A

CRYSTALLINE SILICA					
XYLENE(PURE)	X	X	X	X	X
TRIETHYL ORTHOFORMATE	X	X	X	N/A	N/A
ETHYLBENZENE	X	X	X	X	X

**International Regulations**

Mexico - Grade

Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
BUTYL ACETATE	N/A	Mexico: TWA 150 ppm Mexico: TWA 710 mg/m <sup>3</sup> Mexico: STEL 200 ppm Mexico: STEL 950 mg/m <sup>3</sup>
ALUMINUM OXIDE	N/A	Mexico: TWA 10 mg/m <sup>3</sup>
BUTYL ACETATE	N/A	Mexico: TWA 150 ppm Mexico: TWA 710 mg/m <sup>3</sup> Mexico: STEL 200 ppm Mexico: STEL 950 mg/m <sup>3</sup>
CRISTOBLITE CRYSTALLINE SILICA	N/A	Mexico: TWA 0.05 mg/m <sup>3</sup>
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 150 ppm Mexico: STEL 655 mg/m <sup>3</sup>
ALUMINUM OXIDE	N/A	Mexico: TWA 10 mg/m <sup>3</sup>
ETHYLBENZENE	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 125 ppm Mexico: STEL 545 mg/m <sup>3</sup>

**16. OTHER INFORMATION****NFPA**

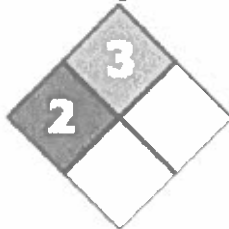
Health Hazard 2

Flammability 3

Instability 0

Physical and Chemical  
Hazards -

NFPA Rating

**HMIS**

Health Hazard 1 \*

Flammability 3

Physical Hazard 0

Personal protection X

**Chronic Hazard Star Legend**

\* Chronic Health Hazard

Issuing Date:

22-May-2015

Revision Date:

20-Jul-2015

Revision Note

No information available

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**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.





Red Topcoat

# SAFETY DATA SHEET

Issuing Date: 31-Jan-2017

Revision Date: 31-Jan-2017

Revision Number: 1

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: AXPB-6-R64 Q2

Product Name: H-SOLIDS TOPC EXT. "GLOSS RED FSD 11136" BMS 1060 TY2

Hentzen Coatings, Inc.  
6937 West Mill Road, Milwaukee, WI 53218-1225

Company Phone Number: 1-414-353-4200

Emergency telephone number ChemTrec 1-800-424-9300

Recommended use of the chemical and restrictions on use

Industrial paint (Paint or Paint-Related), Restricted to professional users

## 2. HAZARDS IDENTIFICATION

### Classification

#### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2
Flammable Liquids	Category 2

### Label Elements

#### Emergency Overview

#### DANGER

#### Hazard Statements

Harmful if swallowed

harmful if inhaled

Causes serious eye irritation

May cause an allergic skin reaction

May cause cancer

Suspected of damaging fertility or the unborn child

Highly flammable liquid and vapor



Appearance Opaque

Physical state Liquid

Odor Solvent

#### Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product



CYCLOHEXANONE	108-94-1	1% - 5%	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLENE(PURE)	1330-20-7	1% - 5%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	14808-60-7	1% - 5%	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/( (%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/( (%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction
METHYL ISOBUTYL KETONE	108-10-1	1% - 5%	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>
TOLUENE	108-88-3	0% - 1%	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm
ETHYLBENZENE	100-41-4	0% - 1%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>

#### 4. FIRST AID MEASURES

##### First Aid Measures

<b>General advice</b>	Immediate medical attention is required.
<b>Eye Contact</b>	Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. Call a physician immediately.
<b>Skin Contact</b>	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Inhalation</b>	Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Immediate medical attention is required. If not breathing, give artificial respiration.
<b>Ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required. Avoid contact with eyes, skin and clothing.
<b>Most important symptoms and effects, both acute and delayed</b>	
<b>Most Important Symptoms and Effects</b>	No information available.
<b>Indication of any immediate medical attention and special treatment needed</b>	
<b>Notes to physician</b>	May cause sensitization of susceptible persons.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

##### Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe



13983-17-0	matter, particulate matter containing no asbestos and <1% crystalline silica		
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
ACETONE 67-64-1	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m <sup>3</sup>
TALC 14807-96-6	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit	IDLH: 1000 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup> containing no Asbestos and <1% Quartz respirable dust
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT 66402-68-4	STEL: 10 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr TWA: 0.02 mg/m <sup>3</sup> Mn respirable particulate matter TWA: 0.1 mg/m <sup>3</sup> Mn inhalable particulate matter	TWA: 5 mg/m <sup>3</sup> Zr	IDLH: 25 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> except Zirconium tetrachloride Zr STEL: 10 mg/m <sup>3</sup> Zr
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
QUARTZ CRYSTALLINE SILICA 14808-60-7	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction	IDLH: 50 mg/m <sup>3</sup> respirable dust TWA: 0.05 mg/m <sup>3</sup> respirable dust
METHYL ISOBUTYL KETONE 108-10-1	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m <sup>3</sup> STEL: 75 ppm STEL: 300 mg/m <sup>3</sup>
TOLUENE 108-88-3	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

#### Exposure controls

##### Engineering Measures

Showers  
Eyewash stations  
Ventilation systems.

#### Individual protection measures, such as personal protective equipment

##### Eye/Face Protection

Use personal protective equipment as required.

##### Skin and Body Protection

Chemical resistant apron.

METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h
METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
XYLENE(PURE) 1330-20-7	= 3500 mg/kg ( Rat )	> 4350 mg/kg ( Rabbit )	= 29.08 mg/L ( Rat ) 4 h
QUARTZ CRYSTALLINE SILICA 14808-60-7	= 500 mg/kg ( Rat )	N/A	N/A
METHYL ISOBUTYL KETONE 108-10-1	= 2080 mg/kg ( Rat )	= 3000 mg/kg ( Rabbit )	= 8.2 mg/L ( Rat ) 4 h
TOLUENE 108-88-3	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h
ETHYLBENZENE 100-41-4	= 3500 mg/kg ( Rat )	= 15400 mg/kg ( Rabbit )	= 17.4 mg/L ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h

**Information on toxicological effects**

**Symptoms**

No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization**

No information available.

**MUTAGENIC EFFECTS**

No information available.

**Carcinogenicity**

This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
STRONTIUM CHROMATE 7789-06-2	A2	Group 1	Known	X
CALCIUM METASILICATE 13983-17-0	N/A	Group 3	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
TALC 14807-96-6	N/A	Group 2B Group 3	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
QUARTZ CRYSTALLINE SILICA 14808-60-7	A2	Group 1	Known	X
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	N/A	X
TOLUENE 108-88-3	N/A	Group 3	N/A	N/A
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A

**Legend:**

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**NTP (National Toxicology Program)**

Known - Known Carcinogen

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present



# SAFETY DATA SHEET

Issuing Date: 31-Jan-2017

Revision Date: 31-Jan-2017

Revision Number: 1

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: AXPB-6-R64 Q2

Product Name: H-SOLIDS TOPC EXT. "GLOSS RED FSD  
11136" BMS 1060 TY2

Hentzen Coatings, Inc.  
6937 West Mill Road, Milwaukee, WI 53218-1225

Company Phone Number: 1-414-353-4200

Emergency telephone number ChemTrec 1-800-424-9300

Recommended use of the chemical and restrictions on use Industrial paint (Paint or Paint-Related), Restricted to professional users

## 2. HAZARDS IDENTIFICATION

### Classification

#### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2
Flammable Liquids	Category 2

### Label Elements

#### Emergency Overview

#### DANGER

#### Hazard Statements

Harmful if swallowed

harmful if inhaled

Causes serious eye irritation

May cause an allergic skin reaction

May cause cancer

Suspected of damaging fertility or the unborn child

Highly flammable liquid and vapor



Appearance Opaque

Physical state Liquid

Odor Solvent

#### Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product



Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Contaminated work clothing should not be allowed out of the workplace  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/Bond container and receiving equipment  
Use explosion-proof electrical/ ventilating/ lighting/ equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Wear protective gloves/protective clothing/eye protection/face protection

#### **Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth  
In case of fire: Use CO2, dry chemical, or foam for extinction

#### **Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool  
Store in accordance with local regulations

#### **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

#### **Hazards not otherwise classified (HNOC)**

##### **Other information**

- Toxic to aquatic life

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **Contains a known or suspected carcinogen**

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
STRONTIUM CHROMATE	7789-06-2	10% - 20%	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO <sub>3</sub> applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect
TITANIUM DIOXIDE	13463-67-7	5% - 10%	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust
ACETONE	67-64-1	5% - 10%	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>
TALC	14807-96-6	5% - 10%	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>

CYCLOHEXANONE	108-94-1	1% - 5%	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLENE(PURE)	1330-20-7	1% - 5%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	14808-60-7	1% - 5%	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/( %SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/( %SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction
METHYL ISOBUTYL KETONE	108-10-1	1% - 5%	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>
TOLUENE	108-88-3	0% - 1%	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm
ETHYLBENZENE	100-41-4	0% - 1%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>

#### 4. FIRST AID MEASURES

##### First Aid Measures

<b>General advice</b>	Immediate medical attention is required.
<b>Eye Contact</b>	Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. Call a physician immediately.
<b>Skin Contact</b>	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Inhalation</b>	Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Immediate medical attention is required. If not breathing, give artificial respiration.
<b>Ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required. Avoid contact with eyes, skin and clothing.
<b>Most important symptoms and effects, both acute and delayed</b>	
<b>Most Important Symptoms and Effects</b>	No information available.
<b>Indication of any immediate medical attention and special treatment needed</b>	
<b>Notes to physician</b>	May cause sensitization of susceptible persons.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

##### Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe

fumes. May cause sensitization by inhalation and skin contact. Extremely flammable.

**Explosion Data**

Sensitivity to Mechanical Impact no data available.

Sensitivity to Static Discharge Yes.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions**

Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Avoid breathing vapors or mists. Ventilate the area.

**Environmental Precautions**

**Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

**Methods and materials for containment and cleaning up**

**Methods for Containment**

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for Cleaning Up**

Cover liquid spill with sand, earth or other noncombustible absorbent material. Sweep up and shovel into suitable containers for disposal. Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on safe handling**

Avoid contact with eyes, skin and clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe vapor or mist. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from heat, sparks and flame.

**Incompatible Products**

None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH	OSHA	NIOSH IDLH
STRONTIUM CHROMATE 7789-06-2	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO <sub>3</sub> applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect	IDLH: 15 mg/m <sup>3</sup> Cr(VI) TWA: 0.0002 mg/m <sup>3</sup> Cr
CALCIUM METASILICATE	TWA: 1 mg/m <sup>3</sup> inhalable particulate	N/A	

13983-17-0	matter, particulate matter containing no asbestos and <1% crystalline silica		
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
ACETONE 67-64-1	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m <sup>3</sup>
TALC 14807-96-6	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit	IDLH: 1000 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup> containing no Asbestos and <1% Quartz respirable dust
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT 66402-68-4	STEL: 10 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr TWA: 0.02 mg/m <sup>3</sup> Mn respirable particulate matter TWA: 0.1 mg/m <sup>3</sup> Mn inhalable particulate matter	TWA: 5 mg/m <sup>3</sup> Zr	IDLH: 25 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> except Zirconium tetrachloride Zr STEL: 10 mg/m <sup>3</sup> Zr
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
QUARTZ CRYSTALLINE SILICA 14808-60-7	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction	IDLH: 50 mg/m <sup>3</sup> respirable dust TWA: 0.05 mg/m <sup>3</sup> respirable dust
METHYL ISOBUTYL KETONE 108-10-1	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m <sup>3</sup> STEL: 75 ppm STEL: 300 mg/m <sup>3</sup>
TOLUENE 108-88-3	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

#### Exposure controls

##### Engineering Measures

Showers  
Eyewash stations  
Ventilation systems.

#### Individual protection measures, such as personal protective equipment

##### Eye/Face Protection

Use personal protective equipment as required.

##### Skin and Body Protection

Chemical resistant apron.

#### Respiratory Protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

#### Hygiene Measures

Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	Appearance	Opaque
Odor	Solvent.	Odor Threshold	No data available
pH	No data available	Flash Point	-4 °F / -20 °C
Decomposition temperature	No data available	Boiling Point	133 °F / 56 °C
Melting Point / Melting Range	No data available	Freezing Point	No data available
Vapor Pressure @20°C (kPa)	No data available	Partition coefficient:	No data available
Vapor Density	No data available	Density	No data available
Bulk density	No data available	Specific Gravity	1.46
Evaporation Rate	No data available	Water solubility	No data available
Dynamic viscosity	No data available	Weight per Gallon (lbs/gal):	12.14
		Flammability Limits in Air	
		Upper	2.51 %
		Lower	0.41 %

### 10. STABILITY AND REACTIVITY

#### Reactivity

No data available

#### Chemical stability

Stable under recommended storage conditions.

#### Conditions to Avoid

Extremes of temperature and direct sunlight.

#### Incompatible Materials

None known based on information supplied.

#### Hazardous Decomposition Products

None known based on information supplied.

### 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Product Information	The product has not been tested
Inhalation	There is no data for this product.
Eye Contact	There is no data for this product.
Skin Contact	There is no data for this product.
Ingestion	There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
STRONTIUM CHROMATE 7789-06-2	= 811 mg/kg ( Rat )	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	> 10000 mg/kg ( Rat )	N/A	N/A
ACETONE 67-64-1	= 5800 mg/kg ( Rat )	> 15700 mg/kg ( Rabbit )	= 50100 mg/m <sup>3</sup> ( Rat ) 8 h



METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h
METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
XYLENE(PURE) 1330-20-7	= 3500 mg/kg ( Rat )	> 4350 mg/kg ( Rabbit )	= 29.08 mg/L ( Rat ) 4 h
QUARTZ CRYSTALLINE SILICA 14808-60-7	= 500 mg/kg ( Rat )	N/A	N/A
METHYL ISOBUTYL KETONE 108-10-1	= 2080 mg/kg ( Rat )	= 3000 mg/kg ( Rabbit )	= 8.2 mg/L ( Rat ) 4 h
TOLUENE 108-88-3	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h
ETHYLBENZENE 100-41-4	= 3500 mg/kg ( Rat )	= 15400 mg/kg ( Rabbit )	= 17.4 mg/L ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h

**Information on toxicological effects**

**Symptoms**

No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization**

No information available.

**MUTAGENIC EFFECTS**

No information available.

**Carcinogenicity**

This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
STRONTIUM CHROMATE 7789-06-2	A2	Group 1	Known	X
CALCIUM METASILICATE 13983-17-0	N/A	Group 3	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
TALC 14807-96-6	N/A	Group 2B Group 3	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
QUARTZ CRYSTALLINE SILICA 14808-60-7	A2	Group 1	Known	X
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	N/A	X
TOLUENE 108-88-3	N/A	Group 3	N/A	N/A
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A

**Legend:**

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**NTP (National Toxicology Program)**

Known - Known Carcinogen

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

Reproductive Toxicity	No information available.
Specific target organ systemic toxicity (single exposure)	No information available.
Specific target organ systemic toxicity (repeated exposure)	No information available.
Chronic Toxicity	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.
Target Organ Effects	Blood, Central nervous system (CNS), Central Vascular System (CVS), Eyes, Kidney, Liver, Lungs, Peripheral Nervous System (PNS), Respiratory system, Skin.
Aspiration hazard	No information available.

#### Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	1603 mg/kg
ATEmix (dermal)	6233 mg/kg
ATEmix (inhalation-dust/mist)	5 mg/l
Oral LD50	2714 mg/kg (rat) Estimated
Dermal LD50	13141 mg/kg (rat) Estimated

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
ACETONE 67-64-1	N/A	4.74 - 6.33: 96 h Oncorhynchus mykiss mL/L LC50 6210 - 8120: 96 h Pimephales promelas mg/L LC50 static 8300: 96 h Lepomis macrochirus mg/L LC50	10294 - 17704: 48 h Daphnia magna mg/L EC50 Static 12600 - 12700: 48 h Daphnia magna mg/L EC50
TALC 14807-96-6	N/A	100: 96 h Brachydanio rerio g/L LC50 semi-static	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
XYLENE(PURE) 1330-20-7	N/A	13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50	0.6: 48 h Gammarus lacustris mg/L LC50 3.82: 48 h water flea mg/L EC50
METHYL ISOBUTYL KETONE 108-10-1	400: 96 h Pseudokirchneriella subcapitata mg/L EC50	496 - 514: 96 h Pimephales promelas mg/L LC50 flow-through	170: 48 h Daphnia magna mg/L EC50
TOLUENE 108-88-3	12.5: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 433: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 15.0: 96 h Lepomis macrochirus mg/L LC50 static 14.1 - 17.16: 96 h Oncorhynchus mykiss mg/L LC50 static 15.22 - 19.05: 96	5.46 - 9.83: 48 h Daphnia magna mg/L EC50 Static 11.5: 48 h Daphnia magna mg/L EC50

		h Pimephales promelas mg/L LC50 flow-through 5.89 - 7.81: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 50.87 - 70.34: 96 h Poecilia reticulata mg/L LC50 static 12.6: 96 h Pimephales promelas mg/L LC50 static 28.2: 96 h Poecilia reticulata mg/L LC50 semi-static 5.8: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 54: 96 h Oryzias latipes mg/L LC50 static	
ETHYLBENZENE 100-41-4	1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 2.6 - 11.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 4.6: 72 h Pseudokirchneriella subcapitata mg/L EC50 438: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static 7.55 - 11: 96 h Pimephales promelas mg/L LC50 flow-through 9.1 - 15.6: 96 h Pimephales promelas mg/L LC50 static 32: 96 h Lepomis macrochirus mg/L LC50 static 4.2: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 9.6: 96 h Poecilia reticulata mg/L LC50 static	1.8 - 2.4: 48 h Daphnia magna mg/L EC50
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	N/A

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
ACETONE 67-64-1	-0.24
METHYL AMYL KETONE 110-43-0	1.98
CYCLOHEXANONE 108-94-1	0.86
METHYL AMYL KETONE 110-43-0	1.98
XYLENE(PURE) 1330-20-7	3.15
METHYL ISOBUTYL KETONE 108-10-1	1.19
TOLUENE 108-88-3	2.7
ETHYLBENZENE 100-41-4	3.2

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Waste treatment methods**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**US EPA Waste Number**

D001

Chemical Name	RCRA - Basis for Listing	RCRA - D Series Wastes
ACETONE 67-64-1	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A
XYLENE(PURE)	Included in waste stream: F039	N/A

1330-20-7		
METHYL ISOBUTYL KETONE 108-10-1	Included in waste stream: F039	N/A
TOLUENE 108-88-3	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151	N/A
ETHYLBENZENE 100-41-4	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
TOLUENE 108-88-3	N/A	N/A	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	N/A

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
STRONTIUM CHROMATE 7789-06-2	Toxic Corrosive Ignitable
ACETONE 67-64-1	Ignitable
SILICEOUS EXTENDER PIGMENT 66402-68-4	Toxic
XYLENE(PURE) 1330-20-7	Toxic Ignitable
TOLUENE 108-88-3	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable

#### 14. TRANSPORT INFORMATION

##### DOT

UN-No UN1263  
Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Special Provisions 149, B52, IB2, T4, TP1, TP8, TP28  
Description UN1263, Paint, Marine Pollutant, 3, II, RQ  
Emergency Response Guide Number 128

##### TDG

UN-No UN1263  
Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Description UN1263, Paint, Marine Pollutant, 3, II

**MEX**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

**ICAO**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

**IATA**

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

**IMDG/IMO**

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

**RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, Environmentally Hazardous, 3, II

**ADR/RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, Environmentally Hazardous, 3, II, (D/E)
ADR/RID-Labels	3

**ADN**

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, Environmentally Hazardous, 3, II
Hazard Labels	3
Limited Quantity (LQ)	5 L
Ventilation	VE01

**15. REGULATORY INFORMATION**

**International Inventories**

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List  
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
 ENCS - Japan Existing and New Chemical Substances  
 IECSC - China Inventory of Existing Chemical Substances  
 KECL - Korean Existing and Evaluated Chemical Substances  
 PICCS - Philippines Inventory of Chemicals and Chemical Substances  
 AICS - Australian Inventory of Chemical Substances

### US Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
STRONTIUM CHROMATE	7789-06-2	0.1
SILICEOUS EXTENDER PIGMENT	66402-68-4	1.0
XYLENE(PURE)	1330-20-7	1.0
METHYL ISOBUTYL KETONE	108-10-1	1.0
ETHYLBENZENE	100-41-4	0.1

#### SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

#### CAA (Clean Air Act)

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
STRONTIUM CHROMATE	7789-06-2	Present
XYLENE(PURE)	1330-20-7	Present
METHYL ISOBUTYL KETONE	108-10-1	Present
TOLUENE	108-88-3	Present
ETHYLBENZENE	100-41-4	Present

#### Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
STRONTIUM CHROMATE	10 lb	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	N/A	N/A
XYLENE(PURE)	100 lb	N/A	N/A	X
TOLUENE	1000 lb	X	X	X
ETHYLBENZENE	1000 lb	X	X	X

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
STRONTIUM CHROMATE	10 lb	N/A	RQ 10 lb final RQ RQ 4.54 kg final RQ
ACETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
METHYL ISOBUTYL KETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
TOLUENE	1000 lb 1 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ RQ 1 lb final RQ RQ 0.454 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

### State Regulations

#### California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
STRONTIUM CHROMATE	7789-06-2	Carcinogen Developmental Female Reproductive Male Reproductive
TITANIUM DIOXIDE	13463-67-7	Carcinogen
QUARTZ CRYSTALLINE SILICA	14808-60-7	Carcinogen
METHYL ISOBUTYL KETONE	108-10-1	Carcinogen Developmental
TOLUENE	108-88-3	Developmental
ETHYLBENZENE	100-41-4	Carcinogen

### U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
STRONTIUM CHROMATE	X	X	X	X	X
TITANIUM DIOXIDE	X	X	X	N/A	X
ACETONE	X	X	X	N/A	N/A
TALC	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	N/A
CYCLOHEXANONE	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	X	X	N/A
XYLENE(PURE)	X	X	X	X	X
QUARTZ CRYSTALLINE SILICA	X	X	X	X	X
METHYL ISOBUTYL KETONE	X	X	X	X	X
TOLUENE	X	X	X	X	X
ETHYLBENZENE	X	X	X	X	X

### International Regulations

Mexico - Grade

Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
STRONTIUM CHROMATE	A1	Mexico: TWA 0.01 mg/m <sup>3</sup> Mexico: TWA 0.5 mg/m <sup>3</sup>
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
ACETONE	N/A	Mexico: TWA 1000 ppm Mexico: TWA 2400 mg/m <sup>3</sup> Mexico: STEL 1260 ppm Mexico: STEL 3000 mg/m <sup>3</sup>
TALC	N/A	Mexico: TWA 2 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT	N/A	Mexico: TWA 5 mg/m <sup>3</sup> Mexico: TWA 0.2 mg/m <sup>3</sup> Mexico: STEL 10 mg/m <sup>3</sup>
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 150 ppm Mexico: STEL 655 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	N/A	Mexico: TWA 0.1 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 205 mg/m <sup>3</sup> Mexico: STEL 75 ppm Mexico: STEL 307 mg/m <sup>3</sup>
TOLUENE	N/A	Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>
ETHYLBENZENE	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 125 ppm Mexico: STEL 545 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>

## 16. OTHER INFORMATION

**NEPA**

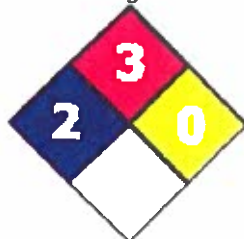
Health Hazard 2

Flammability 3

Instability 0

Physical and Chemical Hazards -

NFPA Rating



**HMIS**

Health Hazard 1 \*

Flammability 3

Physical Hazard 0

Personal protection X

Chronic Hazard Star Legend

\* Chronic Health Hazard



**Issuing Date:** 31-Jan-2017

**Revision Date:** 31-Jan-2017

**Revision Note**

No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

end





white Topcoat

# SAFETY DATA SHEET

Issuing Date: 31-Jan-2017

Revision Date: 31-Jan-2017

Revision Number: 1

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: AXPB-6-W28 G2

Product Name: H-SOLIDS TOPC EXT. "G-WHITE FSD 17875" ( 2 GLS/KIT )

Hentzen Coatings, Inc.  
6937 West Mill Road, Milwaukee, WI 53218-1225

Company Phone Number: 1-414-353-4200

Emergency telephone number ChemTrec 1-800-424-9300

Recommended use of the chemical and restrictions on use Industrial paint (Paint or Paint-Related), Restricted to professional users

## 2. HAZARDS IDENTIFICATION

### Classification

#### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2
Flammable Liquids	Category 2

### Label Elements

#### Emergency Overview

#### DANGER

#### Hazard Statements

Harmful if swallowed

harmful if inhaled

Causes serious eye irritation

May cause an allergic skin reaction

May cause cancer

Suspected of damaging fertility or the unborn child

Highly flammable liquid and vapor



Appearance Opaque

Physical state Liquid

Odor Solvent

#### Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product



Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Contaminated work clothing should not be allowed out of the workplace  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/Bond container and receiving equipment  
Use explosion-proof electrical/ ventilating/ lighting/ equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Wear protective gloves/protective clothing/eye protection/face protection

#### **Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth  
In case of fire: Use CO2, dry chemical, or foam for extinction

#### **Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool  
Store in accordance with local regulations

#### **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

#### **Hazards not otherwise classified (HNOC)**

##### **Other information**

- Toxic to aquatic life

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **Contains a known or suspected carcinogen**

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
STRONTIUM CHROMATE	7789-06-2	10% - 20%	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO <sub>3</sub> applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect
TITANIUM DIOXIDE	13463-67-7	5% - 10%	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust
ACETONE	67-64-1	5% - 10%	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>
TALC	14807-96-6	5% - 10%	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>

CYCLOHEXANONE	108-94-1	1% - 5%	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLENE(PURE)	1330-20-7	1% - 5%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	14808-60-7	1% - 5%	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction
METHYL ISOBUTYL KETONE	108-10-1	1% - 5%	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>
TOLUENE	108-88-3	0% - 1%	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm
ETHYLBENZENE	100-41-4	0% - 1%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>

#### 4. FIRST AID MEASURES

##### First Aid Measures

<b>General advice</b>	Immediate medical attention is required.
<b>Eye Contact</b>	Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. Call a physician immediately.
<b>Skin Contact</b>	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Inhalation</b>	Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Immediate medical attention is required. If not breathing, give artificial respiration.
<b>Ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required. Avoid contact with eyes, skin and clothing.
<b>Most important symptoms and effects, both acute and delayed</b>	
<b>Most Important Symptoms and Effects</b>	No information available.
<b>Indication of any immediate medical attention and special treatment needed</b>	
<b>Notes to physician</b>	May cause sensitization of susceptible persons.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

##### Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe

fumes. May cause sensitization by inhalation and skin contact. Extremely flammable.

**Explosion Data**

**Sensitivity to Mechanical Impact** no data available.

**Sensitivity to Static Discharge** Yes.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions**

Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Avoid breathing vapors or mists. Ventilate the area.

**Environmental Precautions**

**Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

**Methods and materials for containment and cleaning up**

**Methods for Containment**

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for Cleaning Up**

Cover liquid spill with sand, earth or other noncombustible absorbent material. Sweep up and shovel into suitable containers for disposal. Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on safe handling**

Avoid contact with eyes, skin and clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe vapor or mist. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from heat, sparks and flame.

**Incompatible Products**

None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH	OSHA	NIOSH IDLH
STRONTIUM CHROMATE 7789-06-2	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO <sub>3</sub> applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect	IDLH: 15 mg/m <sup>3</sup> Cr(VI) TWA: 0.0002 mg/m <sup>3</sup> Cr
CALCIUM METASILICATE	TWA: 1 mg/m <sup>3</sup> inhalable particulate	N/A	

13983-17-0	matter, particulate matter containing no asbestos and <1% crystalline silica		
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
ACETONE 67-64-1	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m <sup>3</sup>
TALC 14807-96-6	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit	IDLH: 1000 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup> containing no Asbestos and <1% Quartz respirable dust
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT 66402-68-4	STEL: 10 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr TWA: 0.02 mg/m <sup>3</sup> Mn respirable particulate matter TWA: 0.1 mg/m <sup>3</sup> Mn inhalable particulate matter	TWA: 5 mg/m <sup>3</sup> Zr	IDLH: 25 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> except Zirconium tetrachloride Zr STEL: 10 mg/m <sup>3</sup> Zr
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
QUARTZ CRYSTALLINE SILICA 14808-60-7	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction	IDLH: 50 mg/m <sup>3</sup> respirable dust TWA: 0.05 mg/m <sup>3</sup> respirable dust
METHYL ISOBUTYL KETONE 108-10-1	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m <sup>3</sup> STEL: 75 ppm STEL: 300 mg/m <sup>3</sup>
TOLUENE 108-88-3	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

#### Exposure controls

##### Engineering Measures

Showers  
Eyewash stations  
Ventilation systems.

#### Individual protection measures, such as personal protective equipment

##### Eye/Face Protection

Use personal protective equipment as required.

##### Skin and Body Protection

Chemical resistant apron.

### Respiratory Protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

### Hygiene Measures

Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	Appearance	Opaque
Odor	Solvent.	Odor Threshold	No data available
pH	No data available	Flash Point	-4 °F / -20 °C
Decomposition temperature	No data available	Boiling Point	133 °F / 56 °C
Melting Point / Melting Range	No data available	Freezing Point	No data available
Vapor Pressure @20°C (kPa)	No data available	Partition coefficient:	No data available
Vapor Density	No data available	Density	No data available
Bulk density	No data available	Specific Gravity	1.46
Evaporation Rate	No data available	Water solubility	No data available
Dynamic viscosity	No data available	Weight per Gallon (lbs/gal):	12.14
		Flammability Limits in Air	
		Upper	2.51 %
		Lower	0.41 %

## 10. STABILITY AND REACTIVITY

### Reactivity

No data available

### Chemical stability

Stable under recommended storage conditions.

### Conditions to Avoid

Extremes of temperature and direct sunlight.

### Incompatible Materials

None known based on information supplied.

### Hazardous Decomposition Products

None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

Product Information	The product has not been tested
Inhalation	There is no data for this product.
Eye Contact	There is no data for this product.
Skin Contact	There is no data for this product.
Ingestion	There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
STRONTIUM CHROMATE 7789-06-2	= 811 mg/kg ( Rat )	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	> 10000 mg/kg ( Rat )	N/A	N/A
ACETONE 67-64-1	= 5800 mg/kg ( Rat )	> 15700 mg/kg ( Rabbit )	= 50100 mg/m <sup>3</sup> ( Rat ) 8 h



METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h
METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
XYLENE(PURE) 1330-20-7	= 3500 mg/kg ( Rat )	> 4350 mg/kg ( Rabbit )	= 29.08 mg/L ( Rat ) 4 h
QUARTZ CRYSTALLINE SILICA 14808-60-7	= 500 mg/kg ( Rat )	N/A	N/A
METHYL ISOBUTYL KETONE 108-10-1	= 2080 mg/kg ( Rat )	= 3000 mg/kg ( Rabbit )	= 8.2 mg/L ( Rat ) 4 h
TOLUENE 108-88-3	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h
ETHYLBENZENE 100-41-4	= 3500 mg/kg ( Rat )	= 15400 mg/kg ( Rabbit )	= 17.4 mg/L ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h

**Information on toxicological effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization** No information available.

**MUTAGENIC EFFECTS** No information available.

**Carcinogenicity** This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
STRONTIUM CHROMATE 7789-06-2	A2	Group 1	Known	X
CALCIUM METASILICATE 13983-17-0	N/A	Group 3	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
TALC 14807-96-6	N/A	Group 2B Group 3	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
QUARTZ CRYSTALLINE SILICA 14808-60-7	A2	Group 1	Known	X
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	N/A	X
TOLUENE 108-88-3	N/A	Group 3	N/A	N/A
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A

**Legend:**

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**NTP (National Toxicology Program)**

Known - Known Carcinogen

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

<b>Reproductive Toxicity</b>	No information available.
<b>Specific target organ systemic toxicity (single exposure)</b>	No information available.
<b>Specific target organ systemic toxicity (repeated exposure)</b>	No information available.
<b>Chronic Toxicity</b>	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.
<b>Target Organ Effects</b>	Blood, Central nervous system (CNS), Central Vascular System (CVS), Eyes, Kidney, Liver, Lungs, Peripheral Nervous System (PNS), Respiratory system, Skin.
<b>Aspiration hazard</b>	No information available.

#### Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

<b>ATEmix (oral)</b>	1603 mg/kg
<b>ATEmix (dermal)</b>	6233 mg/kg
<b>ATEmix (inhalation-dust/mist)</b>	5 mg/l
<b>Oral LD50</b>	2714 mg/kg (rat) Estimated
<b>Dermal LD50</b>	13141 mg/kg (rat) Estimated

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
ACETONE 67-64-1	N/A	4.74 - 6.33: 96 h Oncorhynchus mykiss mL/L LC50 6210 - 8120: 96 h Pimephales promelas mg/L LC50 static 8300: 96 h Lepomis macrochirus mg/L LC50	10294 - 17704: 48 h Daphnia magna mg/L EC50 Static 12600 - 12700: 48 h Daphnia magna mg/L EC50
TALC 14807-96-6	N/A	100: 96 h Brachydanio rerio g/L LC50 semi-static	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
XYLENE(PURE) 1330-20-7	N/A	13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50	0.6: 48 h Gammarus lacustris mg/L LC50 3.82: 48 h water flea mg/L EC50
METHYL ISOBUTYL KETONE 108-10-1	400: 96 h Pseudokirchneriella subcapitata mg/L EC50	496 - 514: 96 h Pimephales promelas mg/L LC50 flow-through	170: 48 h Daphnia magna mg/L EC50
TOLUENE 108-88-3	12.5: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 433: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 15.0: 96 h Lepomis macrochirus mg/L LC50 static 14.1 - 17.16: 96 h Oncorhynchus mykiss mg/L LC50 static 15.22 - 19.05: 96	5.46 - 9.83: 48 h Daphnia magna mg/L EC50 Static 11.5: 48 h Daphnia magna mg/L EC50

		h Pimephales promelas mg/L LC50 flow-through 5.89 - 7.81: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 50.87 - 70.34: 96 h Poecilia reticulata mg/L LC50 static 12.6: 96 h Pimephales promelas mg/L LC50 static 28.2: 96 h Poecilia reticulata mg/L LC50 semi-static 5.8: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 54: 96 h Oryzias latipes mg/L LC50 static	
ETHYLBENZENE 100-41-4	1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 2.6 - 11.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 4.6: 72 h Pseudokirchneriella subcapitata mg/L EC50 438: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static 7.55 - 11: 96 h Pimephales promelas mg/L LC50 flow-through 9.1 - 15.6: 96 h Pimephales promelas mg/L LC50 static 32: 96 h Lepomis macrochirus mg/L LC50 static 4.2: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 9.6: 96 h Poecilia reticulata mg/L LC50 static	1.8 - 2.4: 48 h Daphnia magna mg/L EC50
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	N/A

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
ACETONE 67-64-1	-0.24
METHYL AMYL KETONE 110-43-0	1.98
CYCLOHEXANONE 108-94-1	0.86
METHYL AMYL KETONE 110-43-0	1.98
XYLENE(PURE) 1330-20-7	3.15
METHYL ISOBUTYL KETONE 108-10-1	1.19
TOLUENE 108-88-3	2.7
ETHYLBENZENE 100-41-4	3.2

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Waste treatment methods**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**US EPA Waste Number**

D001

Chemical Name	RCRA - Basis for Listing	RCRA - D Series Wastes
ACETONE 67-64-1	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A
XYLENE(PURE)	Included in waste stream: F039	N/A

1330-20-7		
METHYL ISOBUTYL KETONE 108-10-1	Included in waste stream: F039	N/A
TOLUENE 108-88-3	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151	N/A
ETHYLBENZENE 100-41-4	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
TOLUENE 108-88-3	N/A	N/A	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	N/A

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
STRONTIUM CHROMATE 7789-06-2	Toxic Corrosive Ignitable
ACETONE 67-64-1	Ignitable
SILICEOUS EXTENDER PIGMENT 66402-68-4	Toxic
XYLENE(PURE) 1330-20-7	Toxic Ignitable
TOLUENE 108-88-3	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable

#### 14. TRANSPORT INFORMATION

##### DOT

UN-No UN1263  
 Proper shipping name Paint  
 Hazard class 3  
 Packing Group II  
 Special Provisions 149, B52, IB2, T4, TP1, TP8, TP28  
 Description UN1263, Paint, Marine Pollutant, 3, II, RQ  
 Emergency Response Guide Number 128

##### TDG

UN-No UN1263  
 Proper shipping name Paint  
 Hazard class 3  
 Packing Group II  
 Description UN1263, Paint, Marine Pollutant, 3, II

**MEX**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

**ICAO**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

**IATA**

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

**IMDG/IMO**

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

**RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, Environmentally Hazardous, 3, II

**ADR/RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, Environmentally Hazardous, 3, II, (D/E)
ADR/RID-Labels	3

**ADN**

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, Environmentally Hazardous, 3, II
Hazard Labels	3
Limited Quantity (LQ)	5 L
Ventilation	VE01

**15. REGULATORY INFORMATION**

**International Inventories**

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List  
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
 ENCS - Japan Existing and New Chemical Substances  
 IECSC - China Inventory of Existing Chemical Substances  
 KECL - Korean Existing and Evaluated Chemical Substances  
 PICCS - Philippines Inventory of Chemicals and Chemical Substances  
 AICS - Australian Inventory of Chemical Substances

### US Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
STRONTIUM CHROMATE	7789-06-2	0.1
SILICEOUS EXTENDER PIGMENT	66402-68-4	1.0
XYLENE(PURE)	1330-20-7	1.0
METHYL ISOBUTYL KETONE	108-10-1	1.0
ETHYLBENZENE	100-41-4	0.1

#### SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

#### CAA (Clean Air Act)

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
STRONTIUM CHROMATE	7789-06-2	Present
XYLENE(PURE)	1330-20-7	Present
METHYL ISOBUTYL KETONE	108-10-1	Present
TOLUENE	108-88-3	Present
ETHYLBENZENE	100-41-4	Present

#### Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
STRONTIUM CHROMATE	10 lb	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	N/A	N/A
XYLENE(PURE)	100 lb	N/A	N/A	X
TOLUENE	1000 lb	X	X	X
ETHYLBENZENE	1000 lb	X	X	X

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
STRONTIUM CHROMATE	10 lb	N/A	RQ 10 lb final RQ RQ 4.54 kg final RQ
ACETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
METHYL ISOBUTYL KETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
TOLUENE	1000 lb 1 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ RQ 1 lb final RQ RQ 0.454 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

### State Regulations

#### California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
STRONTIUM CHROMATE	7789-06-2	Carcinogen Developmental Female Reproductive Male Reproductive
TITANIUM DIOXIDE	13463-67-7	Carcinogen
QUARTZ CRYSTALLINE SILICA	14808-60-7	Carcinogen
METHYL ISOBUTYL KETONE	108-10-1	Carcinogen Developmental
TOLUENE	108-88-3	Developmental
ETHYLBENZENE	100-41-4	Carcinogen

### U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
STRONTIUM CHROMATE	X	X	X	X	X
TITANIUM DIOXIDE	X	X	X	N/A	X
ACETONE	X	X	X	N/A	N/A
TALC	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	N/A
CYCLOHEXANONE	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	X	X	N/A
XYLENE(PURE)	X	X	X	X	X
QUARTZ CRYSTALLINE SILICA	X	X	X	X	X
METHYL ISOBUTYL KETONE	X	X	X	X	X
TOLUENE	X	X	X	X	X
ETHYLBENZENE	X	X	X	X	X

### International Regulations

Mexico - Grade

Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
STRONTIUM CHROMATE	A1	Mexico: TWA 0.01 mg/m <sup>3</sup> Mexico: TWA 0.5 mg/m <sup>3</sup>
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
ACETONE	N/A	Mexico: TWA 1000 ppm Mexico: TWA 2400 mg/m <sup>3</sup> Mexico: STEL 1260 ppm Mexico: STEL 3000 mg/m <sup>3</sup>
TALC	N/A	Mexico: TWA 2 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT	N/A	Mexico: TWA 5 mg/m <sup>3</sup> Mexico: TWA 0.2 mg/m <sup>3</sup> Mexico: STEL 10 mg/m <sup>3</sup>
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 150 ppm Mexico: STEL 655 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	N/A	Mexico: TWA 0.1 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 205 mg/m <sup>3</sup> Mexico: STEL 75 ppm Mexico: STEL 307 mg/m <sup>3</sup>
TOLUENE	N/A	Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>
ETHYLBENZENE	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 125 ppm Mexico: STEL 545 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>

## 16. OTHER INFORMATION

**NFPA**

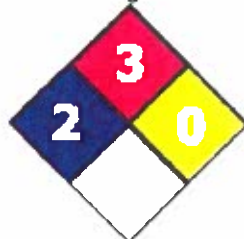
Health Hazard 2

Flammability 3

Instability 0

Physical and Chemical  
Hazards -

NFPA Rating



**HMIS**

Health Hazard 1

Flammability 3

Physical Hazard 0

Personal protection X

Chronic Hazard Star Legend

\* Chronic Health Hazard



**Issuing Date:** 31-Jan-2017

**Revision Date:** 31-Jan-2017

**Revision Note**

No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

end





Yellow Topcoat

# SAFETY DATA SHEET

Issuing Date: 31-Jan-2017

Revision Date: 31-Jan-2017

Revision Number: 1

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: AXPG-6-Y1 Q2

Product Name: H-SOLIDS TOPC EXT. "GLOSS YELLOW  
FED#13538" BMS 1060 T

Hentzen Coatings, Inc.  
6937 West Mill Road, Milwaukee, WI 53218-1225

Company Phone Number: 1-414-353-4200

Emergency telephone number ChemTrec 1-800-424-9300

Recommended use of the chemical and restrictions on use

Industrial paint (Paint or Paint-Related), Restricted to professional users

## 2. HAZARDS IDENTIFICATION

### Classification

### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2
Flammable Liquids	Category 2

### Label Elements

### Emergency Overview

#### DANGER

#### Hazard Statements

Harmful if swallowed

harmful if inhaled

Causes serious eye irritation

May cause an allergic skin reaction

May cause cancer

Suspected of damaging fertility or the unborn child

Highly flammable liquid and vapor



Appearance Opaque

Physical state Liquid

Odor Solvent

### Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product



Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Contaminated work clothing should not be allowed out of the workplace  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/Bond container and receiving equipment  
Use explosion-proof electrical/ ventilating/ lighting/ equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Wear protective gloves/protective clothing/eye protection/face protection

#### **Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth  
In case of fire: Use CO2, dry chemical, or foam for extinction

#### **Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool  
Store in accordance with local regulations

#### **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

#### **Hazards not otherwise classified (HNOC)**

##### **Other information**

- Toxic to aquatic life

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **Contains a known or suspected carcinogen**

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
STRONTIUM CHROMATE	7789-06-2	10% - 20%	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO <sub>3</sub> applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect
TITANIUM DIOXIDE	13463-67-7	5% - 10%	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust
ACETONE	67-64-1	5% - 10%	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>
TALC	14807-96-6	5% - 10%	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>

CYCLOHEXANONE	108-94-1	1% - 5%	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>
METHYL AMYL KETONE	110-43-0	1% - 5%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLENE(PURE)	1330-20-7	1% - 5%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	14808-60-7	1% - 5%	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/( %SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/( %SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction
METHYL ISOBUTYL KETONE	108-10-1	1% - 5%	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>
TOLUENE	108-88-3	0% - 1%	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm
ETHYLBENZENE	100-41-4	0% - 1%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>

#### 4. FIRST AID MEASURES

##### First Aid Measures

<b>General advice</b>	Immediate medical attention is required.
<b>Eye Contact</b>	Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. Call a physician immediately.
<b>Skin Contact</b>	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Inhalation</b>	Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Immediate medical attention is required. If not breathing, give artificial respiration.
<b>Ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required. Avoid contact with eyes, skin and clothing.
<b>Most important symptoms and effects, both acute and delayed</b>	
<b>Most Important Symptoms and Effects</b>	No information available.
<b>Indication of any immediate medical attention and special treatment needed</b>	
<b>Notes to physician</b>	May cause sensitization of susceptible persons.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

##### Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe

fumes. May cause sensitization by inhalation and skin contact. Extremely flammable.

**Explosion Data**

**Sensitivity to Mechanical Impact** no data available.

**Sensitivity to Static Discharge** Yes.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions**

Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Avoid breathing vapors or mists. Ventilate the area.

**Environmental Precautions**

**Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

**Methods and materials for containment and cleaning up**

**Methods for Containment**

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for Cleaning Up**

Cover liquid spill with sand, earth or other noncombustible absorbent material. Sweep up and shovel into suitable containers for disposal. Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on safe handling**

Avoid contact with eyes, skin and clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe vapor or mist. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from heat, sparks and flame.

**Incompatible Products**

None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH	OSHA	NIOSH IDLH
STRONTIUM CHROMATE 7789-06-2	TWA: 0.0005 mg/m <sup>3</sup> Cr	TWA: 5 µg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> CrO <sub>3</sub> applies to any operations or sectors for which the Hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect	IDLH: 15 mg/m <sup>3</sup> Cr(VI) TWA: 0.0002 mg/m <sup>3</sup> Cr
CALCIUM METASILICATE	TWA: 1 mg/m <sup>3</sup> inhalable particulate	N/A	

13983-17-0	matter, particulate matter containing no asbestos and <1% crystalline silica		
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
ACETONE 67-64-1	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m <sup>3</sup>	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m <sup>3</sup>
TALC 14807-96-6	TWA: 2 mg/m <sup>3</sup> particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 20 mppcf if 1% Quartz or more, use Quartz limit	IDLH: 1000 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup> containing no Asbestos and <1% Quartz respirable dust
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT 66402-68-4	STEL: 10 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr TWA: 0.02 mg/m <sup>3</sup> Mn respirable particulate matter TWA: 0.1 mg/m <sup>3</sup> Mn inhalable particulate matter	TWA: 5 mg/m <sup>3</sup> Zr	IDLH: 25 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> except Zirconium tetrachloride Zr STEL: 10 mg/m <sup>3</sup> Zr
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
QUARTZ CRYSTALLINE SILICA 14808-60-7	TWA: 0.025 mg/m <sup>3</sup> respirable particulate matter	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO <sub>2</sub> + 5) mppcf TWA respirable fraction : (10)/(%SiO <sub>2</sub> + 2) mg/m <sup>3</sup> TWA respirable fraction	IDLH: 50 mg/m <sup>3</sup> respirable dust TWA: 0.05 mg/m <sup>3</sup> respirable dust
METHYL ISOBUTYL KETONE 108-10-1	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m <sup>3</sup> STEL: 75 ppm STEL: 300 mg/m <sup>3</sup>
TOLUENE 108-88-3	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>
CYCLOHEXANONE 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

#### Exposure controls

##### Engineering Measures

Showers  
Eyewash stations  
Ventilation systems.

##### Individual protection measures, such as personal protective equipment

##### Eye/Face Protection

Use personal protective equipment as required.

##### Skin and Body Protection

Chemical resistant apron.

### Respiratory Protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

### Hygiene Measures

Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	Appearance	Opaque
Odor	Solvent.	Odor Threshold	No data available
pH	No data available	Flash Point	-4 °F / -20 °C
Decomposition temperature	No data available	Boiling Point	133 °F / 56 °C
Melting Point / Melting Range	No data available	Freezing Point	No data available
Vapor Pressure @20°C (kPa)	No data available	Partition coefficient:	No data available
Vapor Density	No data available	Density	No data available
Bulk density	No data available	Specific Gravity	1.46
Evaporation Rate	No data available	Water solubility	No data available
Dynamic viscosity	No data available	Weight per Gallon (lbs/gal):	12.14
		Flammability Limits in Air	
		Upper	2.51 %
		Lower	0.41 %

## 10. STABILITY AND REACTIVITY

### Reactivity

No data available

### Chemical stability

Stable under recommended storage conditions.

### Conditions to Avoid

Extremes of temperature and direct sunlight.

### Incompatible Materials

None known based on information supplied.

### Hazardous Decomposition Products

None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

Product Information	The product has not been tested
Inhalation	There is no data for this product.
Eye Contact	There is no data for this product.
Skin Contact	There is no data for this product.
Ingestion	There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
STRONTIUM CHROMATE 7789-06-2	= 811 mg/kg ( Rat )	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	> 10000 mg/kg ( Rat )	N/A	N/A
ACETONE 67-64-1	= 5800 mg/kg ( Rat )	> 15700 mg/kg ( Rabbit )	= 50100 mg/m³ ( Rat ) 8 h



METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h
METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	> 2000 ppm ( Rat ) 4 h
XYLENE(PURE) 1330-20-7	= 3500 mg/kg ( Rat )	> 4350 mg/kg ( Rabbit )	= 29.08 mg/L ( Rat ) 4 h
QUARTZ CRYSTALLINE SILICA 14808-60-7	= 500 mg/kg ( Rat )	N/A	N/A
METHYL ISOBUTYL KETONE 108-10-1	= 2080 mg/kg ( Rat )	= 3000 mg/kg ( Rabbit )	= 8.2 mg/L ( Rat ) 4 h
TOLUENE 108-88-3	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h
ETHYLBENZENE 100-41-4	= 3500 mg/kg ( Rat )	= 15400 mg/kg ( Rabbit )	= 17.4 mg/L ( Rat ) 4 h
CYCLOHEXANONE 108-94-1	= 1544 mg/kg ( Rat )	= 947 mg/kg ( Rabbit )	= 8000 ppm ( Rat ) 4 h

**Information on toxicological effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization** No information available.

**MUTAGENIC EFFECTS** No information available.

**Carcinogenicity** This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
STRONTIUM CHROMATE 7789-06-2	A2	Group 1	Known	X
CALCIUM METASILICATE 13983-17-0	N/A	Group 3	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
TALC 14807-96-6	N/A	Group 2B Group 3	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
QUARTZ CRYSTALLINE SILICA 14808-60-7	A2	Group 1	Known	X
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	N/A	X
TOLUENE 108-88-3	N/A	Group 3	N/A	N/A
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X
CYCLOHEXANONE 108-94-1	A3	Group 3	N/A	N/A

**Legend:**

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**NTP (National Toxicology Program)**

Known - Known Carcinogen

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

Reproductive Toxicity	No information available.
Specific target organ systemic toxicity (single exposure)	No information available.
Specific target organ systemic toxicity (repeated exposure)	No information available.
Chronic Toxicity	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.
Target Organ Effects	Blood, Central nervous system (CNS), Central Vascular System (CVS), Eyes, Kidney, Liver, Lungs, Peripheral Nervous System (PNS), Respiratory system, Skin.
Aspiration hazard	No information available.

#### Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	1603 mg/kg
ATEmix (dermal)	6233 mg/kg
ATEmix (inhalation-dust/mist)	5 mg/l
Oral LD50	2714 mg/kg (rat) Estimated
Dermal LD50	13141 mg/kg (rat) Estimated

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
ACETONE 67-64-1	N/A	4.74 - 6.33: 96 h Oncorhynchus mykiss mL/L LC50 6210 - 8120: 96 h Pimephales promelas mg/L LC50 static 8300: 96 h Lepomis macrochirus mg/L LC50	10294 - 17704: 48 h Daphnia magna mg/L EC50 Static 12600 - 12700: 48 h Daphnia magna mg/L EC50
TALC 14807-96-6	N/A	100: 96 h Brachydanio rerio g/L LC50 semi-static	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
XYLENE(PURE) 1330-20-7	N/A	13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50	0.6: 48 h Gammarus lacustris mg/L LC50 3.82: 48 h water flea mg/L EC50
METHYL ISOBUTYL KETONE 108-10-1	400: 96 h Pseudokirchneriella subcapitata mg/L EC50	496 - 514: 96 h Pimephales promelas mg/L LC50 flow-through	170: 48 h Daphnia magna mg/L EC50
TOLUENE 108-88-3	12.5: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 433: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 15.0: 96 h Lepomis macrochirus mg/L LC50 static 14.1 - 17.16: 96 h Oncorhynchus mykiss mg/L LC50 static 15.22 - 19.05: 96	5.46 - 9.83: 48 h Daphnia magna mg/L EC50 Static 11.5: 48 h Daphnia magna mg/L EC50

		h Pimephales promelas mg/L LC50 flow-through 5.89 - 7.81: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 50.87 - 70.34: 96 h Poecilia reticulata mg/L LC50 static 12.6: 96 h Pimephales promelas mg/L LC50 static 28.2: 96 h Poecilia reticulata mg/L LC50 semi-static 5.8: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 54: 96 h Oryzias latipes mg/L LC50 static	
ETHYLBENZENE 100-41-4	1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 2.6 - 11.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 4.6: 72 h Pseudokirchneriella subcapitata mg/L EC50 438: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static 7.55 - 11: 96 h Pimephales promelas mg/L LC50 flow-through 9.1 - 15.6: 96 h Pimephales promelas mg/L LC50 static 32: 96 h Lepomis macrochirus mg/L LC50 static 4.2: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 9.6: 96 h Poecilia reticulata mg/L LC50 static	1.8 - 2.4: 48 h Daphnia magna mg/L EC50
CYCLOHEXANONE 108-94-1	N/A	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	N/A

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
ACETONE 67-64-1	-0.24
METHYL AMYL KETONE 110-43-0	1.98
CYCLOHEXANONE 108-94-1	0.86
METHYL AMYL KETONE 110-43-0	1.98
XYLENE(PURE) 1330-20-7	3.15
METHYL ISOBUTYL KETONE 108-10-1	1.19
TOLUENE 108-88-3	2.7
ETHYLBENZENE 100-41-4	3.2

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Waste treatment methods**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**US EPA Waste Number**

D001

Chemical Name	RCRA - Basis for Listing	RCRA - D Series Wastes
ACETONE 67-64-1	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A
XYLENE(PURE)	Included in waste stream: F039	N/A

1330-20-7		
METHYL ISOBUTYL KETONE 108-10-1	Included in waste stream: F039	N/A
TOLUENE 108-88-3	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151	N/A
ETHYLBENZENE 100-41-4	Included in waste stream: F039	N/A
CYCLOHEXANONE 108-94-1	Included in waste stream: F039	N/A

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
TOLUENE 108-88-3	N/A	N/A	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	N/A

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
STRONTIUM CHROMATE 7789-06-2	Toxic Corrosive Ignitable
ACETONE 67-64-1	Ignitable
SILICEOUS EXTENDER PIGMENT 66402-68-4	Toxic
XYLENE(PURE) 1330-20-7	Toxic Ignitable
TOLUENE 108-88-3	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable

#### 14. TRANSPORT INFORMATION

##### DOT

UN-No UN1263  
Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Special Provisions 149, B52, IB2, T4, TP1, TP8, TP28  
Description UN1263, Paint, Marine Pollutant, 3, II, RQ  
Emergency Response Guide Number 128

##### TDG

UN-No UN1263  
Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Description UN1263, Paint, Marine Pollutant, 3, II

**MEX**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

**ICAO**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

**IATA**

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

**IMDG/IMO**

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

**RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, Environmentally Hazardous, 3, II

**ADR/RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, Environmentally Hazardous, 3, II, (D/E)
ADR/RID-Labels	3

**ADN**

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, Environmentally Hazardous, 3, II
Hazard Labels	3
Limited Quantity (LQ)	5 L
Ventilation	VE01

**15. REGULATORY INFORMATION**

**International Inventories**

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List  
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
 ENCS - Japan Existing and New Chemical Substances  
 IECSC - China Inventory of Existing Chemical Substances  
 KECL - Korean Existing and Evaluated Chemical Substances  
 PICCS - Philippines Inventory of Chemicals and Chemical Substances  
 AICS - Australian Inventory of Chemical Substances

### US Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
STRONTIUM CHROMATE	7789-06-2	0.1
SILICEOUS EXTENDER PIGMENT	66402-68-4	1.0
XYLENE(PURE)	1330-20-7	1.0
METHYL ISOBUTYL KETONE	108-10-1	1.0
ETHYLBENZENE	100-41-4	0.1

#### SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

#### CAA (Clean Air Act)

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
STRONTIUM CHROMATE	7789-06-2	Present
XYLENE(PURE)	1330-20-7	Present
METHYL ISOBUTYL KETONE	108-10-1	Present
TOLUENE	108-88-3	Present
ETHYLBENZENE	100-41-4	Present

#### Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
STRONTIUM CHROMATE	10 lb	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	N/A	N/A
XYLENE(PURE)	100 lb	N/A	N/A	X
TOLUENE	1000 lb	X	X	X
ETHYLBENZENE	1000 lb	X	X	X

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
STRONTIUM CHROMATE	10 lb	N/A	RQ 10 lb final RQ RQ 4.54 kg final RQ
ACETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
METHYL ISOBUTYL KETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
TOLUENE	1000 lb 1 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ RQ 1 lb final RQ RQ 0.454 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ
CYCLOHEXANONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

### State Regulations

#### California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
STRONTIUM CHROMATE	7789-06-2	Carcinogen Developmental Female Reproductive Male Reproductive
TITANIUM DIOXIDE	13463-67-7	Carcinogen
QUARTZ CRYSTALLINE SILICA	14808-60-7	Carcinogen
METHYL ISOBUTYL KETONE	108-10-1	Carcinogen Developmental
TOLUENE	108-88-3	Developmental
ETHYLBENZENE	100-41-4	Carcinogen

### U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
STRONTIUM CHROMATE	X	X	X	X	X
TITANIUM DIOXIDE	X	X	X	N/A	X
ACETONE	X	X	X	N/A	N/A
TALC	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	N/A
CYCLOHEXANONE	X	X	X	X	N/A
METHYL AMYL KETONE	X	X	X	N/A	X
SILICEOUS EXTENDER PIGMENT	N/A	X	X	X	N/A
XYLENE(PURE)	X	X	X	X	X
QUARTZ CRYSTALLINE SILICA	X	X	X	X	X
METHYL ISOBUTYL KETONE	X	X	X	X	X
TOLUENE	X	X	X	X	X
ETHYLBENZENE	X	X	X	X	X

### International Regulations

Mexico - Grade

Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
STRONTIUM CHROMATE	A1	Mexico: TWA 0.01 mg/m <sup>3</sup> Mexico: TWA 0.5 mg/m <sup>3</sup>
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
ACETONE	N/A	Mexico: TWA 1000 ppm Mexico: TWA 2400 mg/m <sup>3</sup> Mexico: STEL 1260 ppm Mexico: STEL 3000 mg/m <sup>3</sup>
TALC	N/A	Mexico: TWA 2 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
SILICEOUS EXTENDER PIGMENT	N/A	Mexico: TWA 5 mg/m <sup>3</sup> Mexico: TWA 0.2 mg/m <sup>3</sup> Mexico: STEL 10 mg/m <sup>3</sup>
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 150 ppm Mexico: STEL 655 mg/m <sup>3</sup>
QUARTZ CRYSTALLINE SILICA	N/A	Mexico: TWA 0.1 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 205 mg/m <sup>3</sup> Mexico: STEL 75 ppm Mexico: STEL 307 mg/m <sup>3</sup>
TOLUENE	N/A	Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>
ETHYLBENZENE	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 125 ppm Mexico: STEL 545 mg/m <sup>3</sup>
CYCLOHEXANONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 400 mg/m <sup>3</sup>

## 16. OTHER INFORMATION

### NFPA

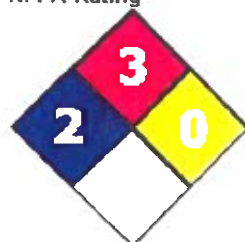
Health Hazard 2

Flammability 3

Instability 0

Physical and Chemical Hazards -

NFPA Rating



### HMIS

Health Hazard 1 \*

Flammability 3

Physical Hazard 0

Personal protection X

Chronic Hazard Star Legend

\* Chronic Health Hazard



Issuing Date: 31-Jan-2017  
Revision Date: 31-Jan-2017  
Revision Note  
No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

end



# SAFETY DATA SHEET

High Solids Epoxy Primer 10P20-44

## Section 1. Identification

**GHS product identifier** : High Solids Epoxy Primer 10P20-44  
**SDS code** : 002751

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses
Industrial use
Uses advised against
Consumer use

**Manufacturer** : Akzo Nobel Coatings, Inc.  
1 East Water Street  
Waukegan, IL 60085  
USA  
Tel. 1 847 623 4200  
Email: customer.service@akzonobel.com  
Akzo Nobel Coatings Ltd.  
110 Woodbine Downs Blvd.  
Unit #4 Etobicoke, Ontario  
Canada M9W 5S6  
+1 (800) 618-1010

**Importer** : Cía. Mexicana de Pinturas International  
S.A. de C.V., Carretera Anillo Periférico,  
No Ext 205, No Interior A, Colonia HDA S JOSE, Garcia, Garcia, CP 66000, Nuevo  
Leon.  
RFC: ANA9510267C4

**Emergency telephone number (with hours of operation)** : CHEMTREC +1 (800) 424-9300 (Inside the US)  
CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 2  
ACUTE TOXICITY (oral) - Category 4  
ACUTE TOXICITY (inhalation) - Category 4  
SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
SKIN SENSITIZATION - Category 1  
GERM CELL MUTAGENICITY - Category 2  
CARCINOGENICITY - Category 1A  
TOXIC TO REPRODUCTION (Fertility) - Category 2  
TOXIC TO REPRODUCTION (Unborn child) - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

**Date of issue/Date of revision** : 6/20/2023 **Version** : 2.01  
**Date of previous issue** : 6/20/2023 1/22

## Section 2. Hazards identification

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) -

Category 3

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (lungs) - Category 1

### GHS label elements

#### Hazard pictograms



#### Signal word

: Danger

#### Hazard statements

: Highly flammable liquid and vapor.  
 Harmful if swallowed or if inhaled.  
 Causes serious eye irritation.  
 Causes skin irritation.  
 May cause an allergic skin reaction.  
 May cause cancer.  
 Suspected of damaging fertility or the unborn child.  
 Suspected of causing genetic defects.  
 May cause respiratory irritation.  
 May cause drowsiness or dizziness.  
 Causes damage to organs through prolonged or repeated exposure. (lungs)

### Precautionary statements

#### Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear protective clothing. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

#### Response

: Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

#### Storage

: Store locked up.

#### Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

#### Hazards not otherwise classified

: None known.

## Section 3. Composition/information on ingredients

#### Substance/mixture

: Mixture

Ingredient name	%	CAS number
strontium chromate	≥20 - ≤25	7789-06-2
reaction product: bisphenol-A(epichlorhydrin); epoxy resin	≥10 - ≤20	25068-38-6
heptan-2-one	≥10 - ≤20	110-43-0
crystalline silica, respirable powder	≥10 - ≤20	14808-60-7
4-methylpentan-2-one	≤10	108-10-1
Phenol, polymer with formaldehyde, glycidyl ether	≤10	28064-14-4
titanium dioxide	≤10	13463-67-7
silicon dioxide	≤5	7631-86-9

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## Section 3. Composition/information on ingredients

2,2-bis(acryloyloxymethyl)butyl acrylate	≤3	15625-89-5
Glycidyl ether of castor oil , low vis. polyepoxide resin	≤3	74398-71-3
xylene	≤3	1330-20-7
toluene	<1	108-88-3
barium chromate	<1	10294-40-3
ethylbenzene	<1	100-41-4

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in Section 8.**

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed. Can cause central nervous system (CNS) depression.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

## Section 4. First aid measures

<b>Inhalation</b>	: Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness reduced fetal weight increase in fetal deaths skeletal malformations
<b>Skin contact</b>	: Adverse symptoms may include the following: irritation redness reduced fetal weight increase in fetal deaths skeletal malformations
<b>Ingestion</b>	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations

### Indication of immediate medical attention and special treatment needed, if necessary

<b>Notes to physician</b>	: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	: No specific treatment.
<b>Protection of first-aiders</b>	: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	: Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
<b>Unsuitable extinguishing media</b>	: Do not use water jet.

<b>Specific hazards arising from the chemical</b>	: Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
<b>Hazardous thermal decomposition products</b>	: Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
<b>Special protective actions for fire-fighters</b>	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
<b>Special protective equipment for fire-fighters</b>	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

## Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
strontium chromate	<b>ACGIH TLV (United States, 3/2020). Notes: measured as Cr</b> TWA: 0.0005 mg/m <sup>3</sup> , (measured as Cr) 8 hours. <b>OSHA PEL 1989 (United States, 3/1989). Notes: as CrO3</b> CEIL: 0.1 mg/m <sup>3</sup> , (as CrO3) <b>OSHA PEL Z2 (United States, 2/2013).</b> CEIL: 1 mg/10m <sup>3</sup> <b>OSHA PEL (United States, 5/2018).</b> TWA: 0.005 mg/m <sup>3</sup> , (as Cr) 8 hours. <b>NIOSH REL (United States, 10/2016).</b> TWA: 0.0002 mg/m <sup>3</sup> , () 8 hours. None.
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin heptan-2-one	<b>ACGIH TLV (United States, 3/2019).</b> TWA: 50 ppm 8 hours. TWA: 233 mg/m <sup>3</sup> 8 hours. <b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 100 ppm 8 hours. TWA: 465 mg/m <sup>3</sup> 8 hours. <b>NIOSH REL (United States, 10/2016).</b> TWA: 100 ppm 10 hours. TWA: 465 mg/m <sup>3</sup> 10 hours. <b>OSHA PEL (United States, 5/2018).</b> TWA: 100 ppm 8 hours. TWA: 465 mg/m <sup>3</sup> 8 hours.
crystalline silica, respirable powder	<b>OSHA PEL Z3 (United States, 6/2016).</b> TWA: 250 mppcf / (%SiO <sub>2</sub> +5) 8 hours. Form: Respirable TWA: 10 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2) 8 hours. Form: Respirable <b>OSHA PEL (United States, 5/2018).</b> TWA: 50 µg/m <sup>3</sup> 8 hours. Form: Respirable dust <b>OSHA PEL 1989 (United States, 3/1989). Notes: as quartz</b> TWA: 0.1 mg/m <sup>3</sup> , (as quartz) 8 hours. Form: Respirable dust <b>ACGIH TLV (United States, 3/2019). Notes: Respirable fraction; see Appendix C, paragraph C.</b> TWA: 0.025 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction <b>NIOSH REL (United States, 10/2016). Notes: See Appendix A - NIOSH Potential</b>



## Section 8. Exposure controls/personal protection

4-methylpentan-2-one

Phenol, polymer with formaldehyde, glycidyl ether  
titanium dioxide

silicon dioxide

2,2-bis(acryloyloxymethyl)butyl acrylate

Glycidyl ether of castor oil , low vis. polyepoxide resin  
xylene

toluene

### Occupational Carcinogen

TWA: 0.05 mg/m<sup>3</sup> 10 hours. Form: respirable dust

### ACGIH TLV (United States, 3/2019). Notes: Substances for which there is a Biological Exposure Index or Indices

STEL: 75 ppm 15 minutes.

TWA: 20 ppm 8 hours.

### NIOSH REL (United States, 10/2016).

STEL: 300 mg/m<sup>3</sup> 15 minutes.

STEL: 75 ppm 15 minutes.

TWA: 205 mg/m<sup>3</sup> 10 hours.

TWA: 50 ppm 10 hours.

### OSHA PEL (United States, 5/2018).

TWA: 410 mg/m<sup>3</sup> 8 hours.

TWA: 100 ppm 8 hours.

### OSHA PEL 1989 (United States, 3/1989).

STEL: 300 mg/m<sup>3</sup> 15 minutes.

STEL: 75 ppm 15 minutes.

TWA: 205 mg/m<sup>3</sup> 8 hours.

TWA: 50 ppm 8 hours.

None.

### OSHA PEL (United States, 5/2018).

TWA: 15 mg/m<sup>3</sup> 8 hours. Form: Total dust

### OSHA PEL 1989 (United States, 3/1989).

TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Total dust

**ACGIH TLV (United States, 3/2019). Notes:** Substance identified by other sources as a suspected or confirmed human carcinogen. 1996 Adoption Substances for which the TLV is higher than the OSHA Permissible Exposure Limit (PEL) and/or the NIOSH Recommended Exposure Limit (REL). See CFR 58(124) :36338-33351, June 30, 1993, for revised OSHA PEL. Refers to Appendix A -- Carcinogens.

TWA: 10 mg/m<sup>3</sup> 8 hours.

None.

### AIHA WEEL (United States, 7/2018).

### Absorbed through skin.

TWA: 1 mg/m<sup>3</sup> 8 hours.

None.

**ACGIH TLV (United States, 3/2019). Notes:** 1996 Adoption Substances for which there is a Biological Exposure Index or Indices Refers to Appendix A -- Carcinogens.

STEL: 651 mg/m<sup>3</sup> 15 minutes.

STEL: 150 ppm 15 minutes.

TWA: 434 mg/m<sup>3</sup> 8 hours.

TWA: 100 ppm 8 hours.

### OSHA PEL (United States, 5/2018).

TWA: 435 mg/m<sup>3</sup> 8 hours.

TWA: 100 ppm 8 hours.

### OSHA PEL 1989 (United States, 3/1989).

STEL: 655 mg/m<sup>3</sup> 15 minutes.

STEL: 150 ppm 15 minutes.

TWA: 435 mg/m<sup>3</sup> 8 hours.

TWA: 100 ppm 8 hours.

### NIOSH REL (United States, 10/2016).

STEL: 560 mg/m<sup>3</sup> 15 minutes.

## Section 8. Exposure controls/personal protection

barium chromate

STEL: 150 ppm 15 minutes.  
 TWA: 375 mg/m<sup>3</sup> 10 hours.  
 TWA: 100 ppm 10 hours.  
**OSHA PEL Z2 (United States, 2/2013).**  
 AMP: 500 ppm 10 minutes.  
 CEIL: 300 ppm  
 TWA: 200 ppm 8 hours.  
**ACGIH TLV (United States, 3/2019).**  
 TWA: 20 ppm 8 hours.  
**OSHA PEL 1989 (United States, 3/1989).**  
**Notes: See Table Z-2.**  
 STEL: 560 mg/m<sup>3</sup> 15 minutes.  
 STEL: 150 ppm 15 minutes.  
 TWA: 375 mg/m<sup>3</sup> 8 hours.  
 TWA: 100 ppm 8 hours.

**ACGIH TLV (United States, 3/2019).**  
 TWA: 0.0002 mg/m<sup>3</sup>, (measured as Cr) 8 hours. Form: Inhalable fraction  
 STEL: 0.0005 mg/m<sup>3</sup>, (measured as Cr) 15 minutes. Form: Inhalable fraction  
**OSHA PEL Z2 (United States, 2/2013).**  
 CEIL: 1 mg/10m<sup>3</sup>  
**OSHA PEL (United States, 5/2018).**  
 TWA: 0.005 mg/m<sup>3</sup>, (as Cr) 8 hours.  
**NIOSH REL (United States, 10/2016).**  
 TWA: 0.0002 mg/m<sup>3</sup>, () 8 hours.  
**OSHA PEL 1989 (United States, 3/1989).**  
**Notes: as CrO3**  
 CEIL: 0.1 mg/m<sup>3</sup>, (as CrO3)

ethylbenzene

**ACGIH TLV (United States, 3/2019). Notes: Substances for which there is a Biological Exposure Index or Indices 2002 Adoption.**  
 TWA: 20 ppm 8 hours.  
**NIOSH REL (United States, 10/2016).**  
 STEL: 545 mg/m<sup>3</sup> 15 minutes.  
 STEL: 125 ppm 15 minutes.  
 TWA: 435 mg/m<sup>3</sup> 10 hours.  
 TWA: 100 ppm 10 hours.  
**OSHA PEL (United States, 5/2018).**  
 TWA: 435 mg/m<sup>3</sup> 8 hours.  
 TWA: 100 ppm 8 hours.  
**OSHA PEL 1989 (United States, 3/1989).**  
 STEL: 545 mg/m<sup>3</sup> 15 minutes.  
 STEL: 125 ppm 15 minutes.  
 TWA: 435 mg/m<sup>3</sup> 8 hours.  
 TWA: 100 ppm 8 hours.

### Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

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## Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

**Physical state** : Liquid.

**Color** : Yellow.

**Odor** : Solvent.

**Odor threshold** : Not available.

**pH** : Not available.

**Melting/freezing point** : Not available.

**Boiling point** : 117°C (242.6°F)

**boiling range** : Not available.

**Flash point** : Closed cup: 4°C (39.2°F)

**Evaporation rate** : Not available.

**Flammability (solid, gas)** : Not available.

### Upper/lower flammability or explosive limits

**Upper:** : Not determined.

**Lower:** : Not determined.

**Vapor pressure** : Not available.

**Vapor density** : Not available.

**Relative density** : 1.447

**Density** : 12.08 lbs/gal      1.447 g/cm<sup>3</sup>

**Solubility** : Not available.

**Solubility in water** : Not available.

## Section 9. Physical and chemical properties

<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: Not available.
<b>Decomposition temperature</b>	: Not available.
<b>Viscosity</b>	: Kinematic (room temperature): 2 cm <sup>2</sup> /s (200 cSt)
<b>Weight Volatiles</b>	: 24.61% (w/w)
<b>Volume Volatiles</b>	: 43.21 % (v/v)
<b>Weight Solids</b>	: 75.39 % (w/w)
<b>Volume Solids</b>	: 56.79 % (v/v)
<b>Regulatory VOC</b>	: 3.0 lbs/gal 356 g/l minus water and exempt solvents
<b>VOC Actual</b>	: 3.0 lbs/gal 356 g/l

## Section 10. Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
<b>Incompatible materials</b>	: Reactive or incompatible with the following materials: oxidizing materials
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
strontium chromate	LC50 Inhalation Dusts and mists	Rat	0.27 mg/l	4 hours
	LD50 Intratracheal	Rat	16.6 mg/kg	-
	LD50 Oral	Rat	3118 mg/kg	-
heptan-2-one	LC50 Inhalation Vapor	Rat	16.7 mg/l	4 hours
	LD50 Dermal	Rabbit	12600 uL/kg	-
	LD50 Intraperitoneal	Mouse	400 mg/kg	-
	LD50 Intraperitoneal	Rat	800 mg/kg	-
	LD50 Oral	Mouse	730 mg/kg	-
	LD50 Oral	Rat	1670 mg/kg	-
	LD50 Oral	Rat	1600 mg/kg	-
4-methylpentan-2-one	LC50 Inhalation Vapor	Rat - Male, Female	11.6 mg/l	4 hours
	LD50 Intraperitoneal	Guinea pig	800 mg/kg	-
	LD50 Intraperitoneal	Mouse	268 mg/kg	-
	LD50 Intraperitoneal	Rat	400 mg/kg	-
	LD50 Oral	Guinea pig	1600 mg/kg	-
	LD50 Oral	Mouse	1900 mg/kg	-
	LD50 Oral	Mouse	2850 mg/kg	-
	LD50 Oral	Rat	2080 mg/kg	-
	LD50 Oral	Rat	4600 mg/kg	-
	LD50 Oral	Rat	4600 mg/kg	-

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2,2-bis(acryloyloxymethyl) butyl acrylate	LD50 Dermal	Rabbit	5170 mg/kg	-
	LD50 Intraperitoneal	Rat	55 mg/kg	-
	LD50 Oral	Rat	5190 uL/kg	-
xylylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LC50 Inhalation Gas.	Rat	6700 ppm	4 hours
	LC50 Inhalation Gas.	Rat	6670 ppm	4 hours
	LD50 Intraperitoneal	Mouse	1548 mg/kg	-
	LD50 Intraperitoneal	Mouse	1548 mg/kg	-
	LD50 Intraperitoneal	Rat	2459 mg/kg	-
	LD50 Oral	Mouse	2119 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
toluene	LD50 Subcutaneous	Rat	1700 mg/kg	-
	LC50 Inhalation Gas.	Mouse	400 ppm	24 hours
	LC50 Inhalation Vapor	Mouse	30000 mg/m <sup>3</sup>	2 hours
	LC50 Inhalation Vapor	Mouse	19900 mg/m <sup>3</sup>	7 hours
	LC50 Inhalation Vapor	Rat	49 g/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	14100 uL/kg	-
	LD50 Intraperitoneal	Guinea pig	500 mg/kg	-
	LD50 Intraperitoneal	Mouse	59 mg/kg	-
	LD50 Intraperitoneal	Rat	1332 mg/kg	-
	LD50 Intravenous	Rat	1960 mg/kg	-
	LD50 Oral	Rat	636 mg/kg	-
	LD50 Route of exposure unreported	Mouse	2 g/kg	-
	LD50 Route of exposure unreported	Rat	6900 mg/kg	-
ethylbenzene	LD50 Subcutaneous	Mouse	2250 mg/kg	-
	LC50 Inhalation Gas.	Rabbit	4000 ppm	4 hours
	LC50 Inhalation Vapor	Mouse	35500 mg/m <sup>3</sup>	2 hours
	LC50 Inhalation Vapor	Rat	55000 mg/m <sup>3</sup>	2 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Dermal	Rabbit	17800 uL/kg	-
	LD50 Intraperitoneal	Mouse	2624 uL/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	Eyes - Mild irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 UI	-
	Skin - Severe irritant	Rabbit	-	24 hours 2 mg	-
heptan-2-one	Skin - Mild irritant	Rabbit	-	24 hours 14 mg	-
4-methylpentan-2-one	Eyes - Moderate irritant	Rabbit	-	24 hours 100 UI	-
	Eyes - Severe irritant	Rabbit	-	40 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
silicon dioxide	Eyes - Mild irritant	Rabbit	-	24 hours 25 mg	-
2,2-bis(acryloyloxymethyl) butyl acrylate	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
xylylene	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-

## Section 11. Toxicological information

toluene	Skin - Mild irritant	Rat	-	8 hours 60 UI	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	100 %	-
	Eyes - Mild irritant	Rabbit	-	0.5 minutes	-
	Eyes - Mild irritant	Rabbit	-	100 mg	-
	Eyes - Severe irritant	Rabbit	-	870 ug	-
ethylbenzene	Eyes - Mild irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Mild irritant	Rabbit	-	435 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-
	Eyes - Severe irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Classification

Product/ingredient name	OSHA	IARC	NTP
strontium chromate	+	1	Known to be a human carcinogen.
crystalline silica, respirable powder	-	1	Known to be a human carcinogen.
4-methylpentan-2-one	-	2B	-
titanium dioxide	-	2B	-
silicon dioxide	-	3	-
2,2-bis(acryloyloxymethyl) butyl acrylate	-	2B	-
xylene	-	3	-
toluene	-	3	-
barium chromate	+	1	Known to be a human carcinogen.
ethylbenzene	-	2B	-

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
strontium chromate	Category 3	Not applicable.	Respiratory tract irritation
heptan-2-one	Category 3	Not applicable.	Narcotic effects
4-methylpentan-2-one	Category 3	Not applicable.	Narcotic effects
xylene	Category 3	Not applicable.	Respiratory tract irritation
toluene	Category 3	Not applicable.	Narcotic effects

### Specific target organ toxicity (repeated exposure)

## Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
crystalline silica, respirable powder	Category 1	Inhalation	lungs
toluene	Category 2	Not determined	Not determined
ethylbenzene	Category 2	Not determined	hearing organs

### Aspiration hazard

Name	Result
xylene	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : Causes serious eye irritation.

**Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.

**Skin contact** : Causes skin irritation. May cause an allergic skin reaction.

**Ingestion** : Harmful if swallowed. Can cause central nervous system (CNS) depression.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

**Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure



## Section 11. Toxicological information

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

**General** : Causes damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : Suspected of causing genetic defects.

**Teratogenicity** : Suspected of damaging the unborn child.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : Suspected of damaging fertility.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	1144 mg/kg
Dermal	42024.1 mg/kg
Inhalation (vapors)	61.59 mg/l
Inhalation (dusts and mists)	1.235 mg/l

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
heptan-2-one	Acute LC50 131000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 505000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 540000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 537000 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
titanium dioxide	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 168 mg/l Fresh water	Fish - Pimephales promelas - Embryo	33 days
	Acute EC50 19.3 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute EC50 27.8 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute EC50 35.306 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 3 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 13.4 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 11 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 3.6 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 15.9 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 6.5 mg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 13 mg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 >1000 mg/l Fresh water	Fish - Pimephales promelas	96 hours

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## Section 12. Ecological information

xylene	Acute LC50 >1000000 µg/l Marine water	Fish - Fundulus heteroclitus	96 hours
	Acute EC50 90 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 8.5 ppm Marine water	Crustaceans - Palaemonetes pugio - Adult	48 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 15700 µg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
toluene	Acute LC50 20870 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 19000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 16940 µg/l Fresh water	Fish - Carassius auratus	96 hours
	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 16500 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6.88 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute EC50 6.56 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute EC50 19600 µg/l Fresh water	Daphnia - Daphnia magna - Larvae	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute EC50 6780 µg/l Fresh water	Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Acute LC50 15.5 ppm Marine water	Crustaceans - Palaemonetes pugio - Adult	48 hours
	Acute LC50 15500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 56.3 ppm Marine water	Crustaceans - Americamysis bahia	48 hours
	Acute LC50 86.3 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
	Acute LC50 6410 µg/l Marine water	Fish - Oncorhynchus gorbuscha - Fry	96 hours
	Acute LC50 5800 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute LC50 6780 µg/l Fresh water	Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
ethylbenzene	Chronic NOEC 2 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Acute EC50 4900 µg/l Marine water	Algae - Skeletonema costatum	72 hours
	Acute EC50 7700 µg/l Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 5400 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 6.53 mg/l Marine water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 13.3 mg/l Marine water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 2.97 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours

## Section 12. Ecological information

Acute EC50 2.93 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Acute LC50 8.78 mg/l Marine water	Crustaceans - Artemia sp. - Nauplii	48 hours
Acute LC50 13.3 mg/l Marine water	Crustaceans - Artemia sp. - Nauplii	48 hours
Acute LC50 40000 µg/l Marine water	Crustaceans - Cancer magister - Zoea	48 hours
Acute LC50 18.4 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Acute LC50 13.9 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Acute LC50 75000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
Acute LC50 5100 µg/l Marine water	Fish - Menidia menidia	96 hours
Acute LC50 9090 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Acute LC50 9100 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Acute LC50 4.3 ul/L Marine water	Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling)	96 hours

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	2.64 to 3.78	31	low
heptan-2-one	2.26	-	low
4-methylpentan-2-one	1.9	-	low
2,2-bis(acryloyloxymethyl) butyl acrylate	0.67	-	low
xylene	3.12	8.1 to 25.9	low
toluene	2.73	90	low
ethylbenzene	3.6	-	low

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.








Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

The information provided in section 14 is based on a bulk package shipment via ground transport in North America. All shippers are responsible for ensuring the proper transportation classification and package/container requirements are followed for the relevant mode of transport.

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT
Transport hazard class(es)	3 	3  	3 	3  	3 
Packing group	II	II	II	II	II
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.	Marine Pollutant (s): strontium chromate, reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	Yes. The environmentally hazardous substance mark is not required.

### Additional information

- DOT Classification** : **Reportable quantity** 45.731 lbs / 20.762 kg [3.7904 gal / 14.348 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.  
**Special provisions** 383
- TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark).  
The marine pollutant mark is not required when transported by road or rail.
- IMDG** : **Emergency schedules** F-E, \_S-E\_  
The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL and the IBC Code** : Not available.

## Section 15. Regulatory information

- U.S. Federal regulations** : **TSCA 4(a) final test rules:** Castor oil, sulfated, sodium salt  
**TSCA 5(a)2 final significant new use rules:** No products found.  
**TSCA 5(e) substance consent order:** No products found.  
**TSCA 6 proposed risk management:** lead powder  
**TSCA 6 final risk management:** strontium chromate; barium chromate  
**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**TSCA 12(b) annual export notification:** strontium chromate

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## Section 15. Regulatory information

**United States inventory (TSCA 8b):** All components are listed or exempted.

**Clean Water Act (CWA) 307:** strontium chromate; barium chromate; lead powder; Cadmium (Non-pyrophoric); ethylbenzene; toluene

**Clean Water Act (CWA) 311:** strontium chromate; xylene; ethylbenzene; toluene; Formaldehyde, solution; n-butyl acetate

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Listed

**SARA 304 RQ** : 572228.4 lbs / 259791.7 kg [47429 gal / 179538.1 L]

### SARA 311/312

**Classification** : FLAMMABLE LIQUIDS - Category 2  
 ACUTE TOXICITY (oral) - Category 4  
 ACUTE TOXICITY (inhalation) - Category 4  
 SKIN IRRITATION - Category 2  
 EYE IRRITATION - Category 2A  
 SKIN SENSITIZATION - Category 1  
 GERM CELL MUTAGENICITY - Category 2  
 CARCINOGENICITY - Category 1A  
 TOXIC TO REPRODUCTION (Fertility) - Category 2  
 TOXIC TO REPRODUCTION (Unborn child) - Category 2  
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (lungs) - Category 1

### Composition/information on ingredients

Name	%	Classification
strontium chromate	≥20 - ≤25	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 2 SKIN SENSITIZATION - Category 1 GERM CELL MUTAGENICITY - Category 2 CARCINOGENICITY - Category 1A TOXIC TO REPRODUCTION (Fertility) - Category 2 TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	≥10 - ≤20	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1
heptan-2-one	≥10 - ≤20	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
crystalline silica, respirable powder	≥10 - ≤20	CARCINOGENICITY (inhalation) - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED

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## Section 15. Regulatory information

4-methylpentan-2-one	≤10	EXPOSURE) (lungs) (inhalation) - Category 1 FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
Phenol, polymer with formaldehyde, glycidyl ether	≤10	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1
titanium dioxide	≤10	CARCINOGENICITY - Category 2
2,2-bis(acryloyloxymethyl)butyl acrylate	≤3	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2
Glycidyl ether of castor oil , low vis. polyepoxide resin	≤3	SKIN SENSITIZATION - Category 1
xylene	≤3	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
toluene	<1	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
barium salts	<1	ASPIRATION HAZARD - Category 1 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4
ethylbenzene	<1	CARCINOGENICITY - Category 1A FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 2 ASPIRATION HAZARD - Category 1

### SARA 313

	Product name	CAS number	%
<b>Form R - Reporting requirements</b>	strontium chromate	7789-06-2	≥20 - ≤25
	4-methylpentan-2-one	108-10-1	≤10
	xylene	1330-20-7	≤3
	barium chromate	10294-40-3	<1
	ethylbenzene	100-41-4	<1
	lead powder	7439-92-1	<0.03
<b>Supplier notification</b>	strontium chromate	7789-06-2	≥20 - ≤25
	4-methylpentan-2-one	108-10-1	≤10
	xylene	1330-20-7	≤3
	barium chromate	10294-40-3	<1
	ethylbenzene	100-41-4	<1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

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**AkzoNobel**

## Section 15. Regulatory information

- Massachusetts** : The following components are listed: STRONTIUM CHROMATE; METHYL (N-AMYL) KETONE; SILICA, CRYSTALLINE, QUARTZ; AMORPHOUS SILICA; METHYL (N-AMYL) KETONE; METHYL ISOBUTYL KETONE; 4-METHYL-2-PENTANONE; TITANIUM DIOXIDE; TIN DIOXIDE DUST; XYLENE; DIMETHYLBENZENE
- New York** : The following components are listed: Strontium chromate; Methyl isobutyl ketone; Hexone; Xylene mixed
- New Jersey** : The following components are listed: STRONTIUM CHROMATE; CHROMIC ACID (H<sub>2</sub>CrO<sub>4</sub>), STRONTIUM SALT (1:1); BARIUM CHROMATE; CHROMIC ACID (H<sub>2</sub>CrO<sub>4</sub>), BARIUM SALT (1:1); METHYL n-AMYL KETONE; 2-HEPTANONE; SILICA, QUARTZ; QUARTZ (SiO<sub>2</sub>); METHYL n-AMYL KETONE; 2-HEPTANONE; METHYL ISOBUTYL KETONE; 2-PENTANONE, 4-METHYL-; TITANIUM DIOXIDE; TITANIUM OXIDE (TiO<sub>2</sub>); XYLENES; BENZENE, DIMETHYL-
- Pennsylvania** : The following components are listed: CHROMIC ACID, STRONTIUM SALT (1:1); BARIUM COMPOUNDS; 2-HEPTANONE; QUARTZ DUST; QUARTZ; SILICA; 2-HEPTANONE; 2-PENTANONE, 4-METHYL-; TITANIUM OXIDE; BENZENE, DIMETHYL-

### California Prop. 65

 **WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Ingredient name	No significant risk level	Maximum acceptable dosage level
strontium chromate	Yes.	Yes.
crystalline silica, respirable powder	-	-
4-methylpentan-2-one	-	-
titanium dioxide	-	-
toluene	-	Yes.
barium chromate	Yes.	Yes.
ethylbenzene	Yes.	-
Formaldehyde, solution	Yes.	-
lead powder	Yes.	Yes.
phenyl glycidyl ether	Yes.	-
Cadmium (Non-pyrophoric)	Yes.	Yes.

### Inventory list

- Australia** : All components are listed or exempted.
- Canada** : All components are listed or exempted.
- China** : All components are listed or exempted.
- Europe** : All components are listed or exempted.
- Japan** : **Japan inventory (ENCS):** At least one component is not listed.  
**Japan inventory (ISHL):** At least one component is not listed.
- Malaysia** : At least one component is not listed.
- New Zealand** : At least one component is not listed.
- Philippines** : At least one component is not listed.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : All components are listed or exempted.
- Thailand** : At least one component is not listed.
- Turkey** : At least one component is not listed.
- Viet Nam** : At least one component is not listed.



## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health	*	3
Flammability		3
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

### Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 2	On basis of test data
ACUTE TOXICITY (oral) - Category 4	Calculation method
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
SKIN IRRITATION - Category 2	Calculation method
EYE IRRITATION - Category 2A	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
GERM CELL MUTAGENICITY - Category 2	Calculation method
CARCINOGENICITY - Category 1A	Calculation method
TOXIC TO REPRODUCTION (Fertility) - Category 2	Calculation method
TOXIC TO REPRODUCTION (Unborn child) - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (lungs) - Category 1	Calculation method

### History

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Key to abbreviations : ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 UN = United Nations

Indicates information that has changed from previously issued version.

### Notice to reader

## Section 16. Other information

### FOR PROFESSIONAL USE ONLY

**IMPORTANT NOTE** The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws. Any person using this product must determine for themselves, by preliminary tests or otherwise, the suitability of this product for their purposes. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Safety Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. The application, use and processing of AkzoNobel's products and the products manufactured by Buyer on the basis of AkzoNobel's technical advice are beyond AkzoNobel's control and, therefore, entirely Buyer's own responsibility. AkzoNobel makes no warranty as to accuracy and/or sufficiency of such information and/or suggestions, as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nothing contained herein shall be construed as granting or extending any license under any patent. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.

IA\_493







## SAFETY DATA SHEET

### Hardener S 66/22 R

Code: 90030/000000

#### SECTION 1: Identification of the substance/mixture and of the company/undertaking

##### 1.1 Product identifier

Product name : Hardener S 66/22 R

##### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

##### 1.3 Details of the supplier of the safety data sheet

Manufacturer : Akzo Nobel Aerospace Coatings  
Rijksstraatweg 31  
2171 AJ Sassenheim  
P.O. Box 3  
2170 BA Sassenheim  
The Netherlands

e-mail address of person responsible for this SDS : ANACMSDS@AKZONOBEL.com

##### 1.4 Emergency telephone number

###### Supplier

Telephone number : + 31 (0)71 308 6944  
Hours of operation : 24 hours

#### SECTION 2: Hazards identification

##### 2.1 Classification of the substance or mixture

Product definition : Mixture

###### Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : R10  
R43, R66, R67

Physical/chemical hazards : Flammable.

Human health hazards : May cause sensitisation by skin contact. Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

##### 2.2 Label elements

Hazard symbol or symbols :



Indication of danger : Irritant

**SECTION 2: Hazards identification**

<b>Risk phrases</b>	: R10- Flammable. R43- May cause sensitisation by skin contact. R66- Repeated exposure may cause skin dryness or cracking. R67- Vapours may cause drowsiness and dizziness.
<b>Safety phrases</b>	: S24- Avoid contact with skin. S37- Wear suitable gloves.
<b>Hazardous ingredients</b>	: n-butyl acetate Hexamethylene diisocyanate, oligomers
<b>Supplemental label elements</b>	: Contains isocyanates. See information supplied by the manufacturer. This information is provided by the present Safety Data Sheet.

**2.3 Other hazards**

<b>Other hazards which do not result in classification</b>	: Not available.
--	------------------

**SECTION 3: Composition/information on ingredients**

**Substance/mixture** : Mixture

Product/ingredient name	Identifiers	%	<u>Classification</u>		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
n-butyl acetate	EC: 204-658-1 CAS: 123-86-4 Index: 607-025-00-1	50-75	R10 R66, R67	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H336	[1] [2]
Hexamethylene diisocyanate, oligomers	EC: 500-060-2 CAS: 28182-81-2 Index: 3.1: Selfclassified 3.2: selfclassified	25-35	R43	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317	[1] [2]
2-methoxy-1-methylethyl acetate	EC: 203-603-9 CAS: 108-65-6 Index: 607-195-00-7	5-10	R10	Flam. Liq. 3, H226	[2]
xylene	EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	<12,5	R10 Xn; R20/21 Xi; R38	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319	[1] [2]
ethylbenzene	EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	<25	F; R11 Xn; R20	Flam. Liq. 2, H225 Acute Tox. 4, H332 Eye Irrit. 2, H319	[1] [2]
hexamethylene-di-isocyanate	EC: 212-485-8 CAS: 822-06-0 Index: 3.1: 615-011-00-1 3.2: Selfclassified	0,1-1	T; R23 Xn; R21/22 Xi; R36/37/38 R42/43	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 3, H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335	[1] [2]
			<b>See Section 16 for the full text of the R-phrases declared above.</b>	<b>See Section 16 for the full text of the H statements declared above.</b>	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

### SECTION 3: Composition/information on ingredients

- [1] Substance classified with a health or environmental hazard  
[2] Substance with a workplace exposure limit  
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII  
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

Occupational exposure limits, if available, are listed in Section 8.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- General** : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.
- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do not induce vomiting.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

#### 4.2 Most important symptoms and effects, both acute and delayed

There are no data available on the preparation itself. The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified for toxicological hazards accordingly. See sections 3 and 15 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Based on the properties of the isocyanate components and considering toxicological data on similar preparations, this preparation may cause acute irritation and/or sensitisation of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitised persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Repeated or prolonged contact with irritants may cause dermatitis.

Contains Hexamethylene diisocyanate, oligomers, hexamethylene-di-isocyanate. May produce an allergic reaction.

#### 4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

See toxicological information (Section 11)

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media** : Recommended: alcohol-resistant foam, CO<sub>2</sub>, powders, water spray or mist.

**Unsuitable extinguishing media** : Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

**Hazards from the substance or mixture** : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

### 5.3 Advice for firefighters

**Special protective actions for fire-fighters** : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.

**Special protective equipment for fire-fighters** : Appropriate breathing apparatus may be required.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : Exclude sources of ignition and ventilate the area. Avoid breathing vapour or mist. Refer to protective measures listed in sections 7 and 8.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also Section 8 for additional information on hygiene measures.

### 6.2 Environmental precautions

: Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

### 6.3 Methods and materials for containment and cleaning up

: Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13).

### 6.4 Reference to other sections

: See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be exposed to any process in which this product is used.**

**Examination of lung function should be carried out on a regular basis on persons spraying this preparation.**

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- : Prevent the creation of flammable or explosive concentrations of vapours in air and avoid vapour concentrations higher than the occupational exposure limits. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard.
- To dissipate static electricity during transfer, earth drum and connect to receiving container with bonding strap. Operators should wear antistatic footwear and clothing and floors should be of the conducting type.
- Care should be taken when re-opening partly-used containers. Precautions should be taken to minimise exposure to atmospheric humidity or water. CO<sub>2</sub> will be formed, which, in closed containers, could result in pressurisation. Keep away from heat, sparks and flame. No sparking tools should be used.
- Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this preparation. Avoid inhalation of dust from sanding.
- Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
- Put on appropriate personal protective equipment (see Section 8).
- Never use pressure to empty. Container is not a pressure vessel.
- Always keep in containers made from the same material as the original one.
- Comply with the health and safety at work laws.
- Information on fire and explosion protection**
- Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

### 7.2 Conditions for safe storage, including any incompatibilities

- : Store in accordance with local regulations.
- Notes on joint storage**
- Keep away from: oxidising agents, strong alkalis, strong acids.
- Additional information on storage conditions**
- Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight.
- Keep container tightly closed.
- Keep away from sources of ignition. No smoking. Prevent unauthorised access.
- Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

### 7.3 Specific end use(s)

- Recommendations** : Not available.
- Industrial sector specific solutions** : Not available.

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
n-butyl acetate	<b>EH40/2005 WELs (United Kingdom (UK), 8/2007).</b> STEL: 966 mg/m <sup>3</sup> 15 minute(s). STEL: 200 ppm 15 minute(s). TWA: 724 mg/m <sup>3</sup> 8 hour(s). TWA: 150 ppm 8 hour(s).
Hexamethylene diisocyanate, oligomers	<b>EH40/2005 WELs (United Kingdom (UK), 8/2007). Skin sensitiser.</b> STEL: 0,07 mg/m <sup>3</sup> , (as NCO) 15 minute(s). TWA: 0,02 mg/m <sup>3</sup> , (as NCO) 8 hour(s).
2-methoxy-1-methylethyl acetate	<b>EH40/2005 WELs (United Kingdom (UK), 8/2007). Absorbed through skin.</b> STEL: 548 mg/m <sup>3</sup> 15 minute(s).

**SECTION 8: Exposure controls/personal protection**

xylylene	<p>STEL: 100 ppm 15 minute(s). TWA: 274 mg/m<sup>3</sup> 8 hour(s). TWA: 50 ppm 8 hour(s).</p> <p><b>EH40/2005 WELs (United Kingdom (UK), 8/2007). Absorbed through skin.</b></p> <p>STEL: 441 mg/m<sup>3</sup> 15 minute(s). STEL: 100 ppm 15 minute(s). TWA: 220 mg/m<sup>3</sup> 8 hour(s). TWA: 50 ppm 8 hour(s).</p>
ethylbenzene	<p><b>EH40/2005 WELs (United Kingdom (UK), 8/2007). Absorbed through skin.</b></p> <p>STEL: 552 mg/m<sup>3</sup> 15 minute(s). STEL: 125 ppm 15 minute(s). TWA: 441 mg/m<sup>3</sup> 8 hour(s). TWA: 100 ppm 8 hour(s).</p>
hexamethylene-di-isocyanate	<p><b>EH40/2005 WELs (United Kingdom (UK), 8/2007). Skin sensitiser.</b></p> <p>STEL: 0,07 mg/m<sup>3</sup>, (as NCO) 15 minute(s). TWA: 0,02 mg/m<sup>3</sup>, (as NCO) 8 hour(s).</p>

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

**Derived effect levels**

No DELs available.

**Predicted effect concentrations**

No PECs available.

**8.2 Exposure controls**

**Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be exposed to any process in which this product is used.**

**Examination of lung function should be carried out on a regular basis on persons spraying this preparation.**

**Appropriate engineering controls** : Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. Air-fed protective respiratory equipment must be worn by the spray operator, even when good ventilation is provided. In other operations, if local exhaust ventilation and good general extraction are not sufficient to maintain concentrations of particulates and solvent vapours below the OEL, suitable respiratory protection must be worn. (See Personal protection.)

**Individual protection measures**

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Use safety eyewear designed to protect against splash of liquids.

**Skin protection**

**Hand protection** : Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

**Gloves** : For prolonged or repeated handling, use the following type of gloves:

Not recommended: nitrile rubber, neoprene, butyl rubber, PVC

The recommendation for the type or types of glove to use when handling this product is based on information from the following source:



## SECTION 8: Exposure controls/personal protection

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

- Body protection** : Personnel should wear antistatic clothing made of natural fibres or of high-temperature-resistant synthetic fibres.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : By spraying: air-fed respirator.  
By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask.
- Environmental exposure controls** : Do not allow to enter drains or watercourses.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

- Physical state** : Liquid.
- Colour** : Product Specific Information
- Odour** : Characteristic.
- Odour threshold** : Not available.
- pH** : Neutral.
- Melting point/freezing point** : Not available.
- Initial boiling point and boiling range** : 126,2°C
- Flash point** : Closed cup: 27°C
- Evaporation rate** : Not available.
- Upper/lower flammability or explosive limits** : Greatest known range: Lower: 1% Upper: 7% (xylene)
- Vapour pressure** : Not available.
- Vapour density** : Highest known value: 4.6 (Air = 1) (2-methoxy-1-methylethyl acetate).  
Weighted average: 4.02 (Air = 1)
- Relative density** : 0,955
- Solubility(ies)** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic: 0,418848 cm<sup>2</sup>/s
- Explosive properties** : Not available.
- Oxidising properties** : Not available.
- VOC content** : 640

### 9.2 Other information

No additional information.

## SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : Stable under recommended storage and handling conditions (see section 7).
- 10.3 Possibility of hazardous reactions** :



**SECTION 10: Stability and reactivity**

The product reacts slowly with water, resulting in the production of carbon dioxide. In closed containers, pressure build-up could result in distortion, expansion and, in extreme cases, bursting of the container.

**10.4 Conditions to avoid** : In a fire, hazardous decomposition products may be produced.

**10.5 Incompatible materials** : Keep away from: oxidising agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.

**10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**SECTION 11: Toxicological information****11.1 Information on toxicological effects**

There are no data available on the preparation itself. The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified for toxicological hazards accordingly. See sections 3 and 15 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Based on the properties of the isocyanate components and considering toxicological data on similar preparations, this preparation may cause acute irritation and/or sensitisation of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitised persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Repeated or prolonged contact with irritants may cause dermatitis.

Contains Hexamethylene diisocyanate, oligomers, hexamethylene-di-isocyanate. May produce an allergic reaction.

**Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
n-butyl acetate	LC50 Inhalation Vapour	Rat	390 ppm	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10768 mg/kg	-
2-methoxy-1-methylethyl acetate	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	8532 mg/kg	-
xylene	LD50 Dermal	Rabbit	>1700 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-

**Conclusion/Summary** : Not available.

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-butyl acetate	Eyes - Moderate irritant	Rabbit	-	-	-
	Skin - Moderate irritant	Rabbit	-	-	-
Hexamethylene diisocyanate, oligomers	Eyes - Moderate irritant	Rabbit	-	-	-
	Skin - Moderate irritant	Rabbit	-	-	-
xylene	Eyes - Mild irritant	Rabbit	-	-	-
	Eyes - Severe irritant	Rabbit	-	-	-
	Skin - Mild irritant	Rat	-	-	-
	Skin - Moderate irritant	Rabbit	-	-	-

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**SECTION 11: Toxicological information**

ethylbenzene	Eyes - Severe irritant Skin - Mild irritant	Rabbit Rabbit	- -	- -	- -
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**Conclusion/Summary** : Not available.

**Sensitisation**

**Conclusion/Summary** : Not available.

**Mutagenicity**

**Conclusion/Summary** : Not available.

**Carcinogenicity**

**Conclusion/Summary** : Not available.

**Reproductive toxicity**

**Conclusion/Summary** : Not available.

**Teratogenicity**

**Conclusion/Summary** : Not available.

**Other information** : Not available.

**SECTION 12: Ecological information****12.1 Toxicity**

There are no data available on the preparation itself.  
Do not allow to enter drains or watercourses.

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is not classified as dangerous for the environment.

Product/ingredient name	Result	Species	Exposure
n-butyl acetate	Acute EC50 19 mg/L	Fish	48 hours
	Acute LC50 32000 ug/L Marine water	Crustaceans - Artemia salina - Nauplii	48 hours
xylene	Acute LC50 18 mg/L	Fish	96 hours
	Acute LC50 100 mg/L	Fish	96 hours
	Acute LC50 8500 ug/L Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 3,3 mg/L	Fish	96 hours
	Acute LC50 8,2 mg/L	Fish	96 hours
ethylbenzene	Acute LC50 8,6 mg/L	Fish	96 hours
	Acute LC50 12 mg/L	Fish	96 hours
	Acute LC50 13,3 mg/L	Fish	96 hours
	Acute LC50 13,4 mg/L	Fish	96 hours
	Acute EC50 7,2 mg/L	Algae	48 hours
	Acute EC50 2,93 mg/L	Daphnia	48 hours
	Acute EC50 2,97 mg/L	Daphnia	48 hours
	Acute LC50 >5200 ug/L Marine water	Crustaceans - Americamysis bahia - <24 hours	48 hours
	Acute LC50 4,2 mg/L	Fish	96 hours
	Acute LC50 9,09 mg/L	Fish	96 hours
	Acute LC50 9,6 mg/L	Fish	96 hours
	Chronic NOEC 3300 ug/L Marine water	Fish - Menidia menidia	96 hours

**Conclusion/Summary** : Not available.

**12.2 Persistence and degradability**

**Conclusion/Summary** : Not available.

**12.3 Bioaccumulative potential**

Not available.

**12.4 Mobility in soil**

## SECTION 12: Ecological information

- Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.
- Mobility** : Not available.

### 12.5 Results of PBT and vPvB assessment

- PBT** : Not applicable.
- vPvB** : Not applicable.

- 12.6 Other adverse effects** : No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

Do not allow to enter drains or watercourses. Residues in empty containers should be neutralised with a decontaminant (see section 6).

Dispose of according to all federal, state and local applicable regulations.

### 13.1 Waste treatment methods

#### Product

- Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
- Hazardous waste** : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.
- European waste catalogue (EWC)** : The European Waste Catalogue classification of this product, when disposed of as waste, is:  
wastes not otherwise specified.  
If this product is mixed with other wastes, this code may no longer apply. If mixed with other wastes, the appropriate code should be assigned. For further information, contact your local waste authority.

#### Packaging

- Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
- Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

#### UN

- UN number** : UN1263
- Proper shipping name** : PAINT RELATED MATERIAL
- Class** : 3
- Subsidiary class** : -
- Packing group** : III

**SECTION 14: Transport information**

Label : 

**IMDG**

UN number : UN1263  
Proper shipping name : PAINT RELATED MATERIAL  
Class : 3  
Subsidiary class : -  
Packing group : III  
Label :



Marine pollutant : No.  
Emergency schedules (EmS) : F-E, S-E  
Special provisions : Not available.

**ADR**

UN number : UN1263  
Proper shipping name : PAINT RELATED MATERIAL  
Class : 3  
Subsidiary class : -  
Packing group : III  
Label :



Marine pollutant : No.

**ADN/ADNR**

UN number : UN1263  
Proper shipping name : PAINT RELATED MATERIAL  
Class : 3  
Subsidiary class : -  
Packing group : III  
Label :



Marine pollutant : No.

**IATA**

UN number : UN1263  
Proper shipping name : PAINT RELATED MATERIAL  
Class : 3  
Subsidiary class : -  
Packing group : III  
Label :



**SECTION 14: Transport information****Special provisions** : Not available.**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU Regulation (EC) No. 1907/2006 (REACH)****Annex XIV - List of substances subject to authorisation****Substances of very high concern**

None of the components are listed.

**Annex XVII - Restrictions** : Not applicable.  
**on the manufacture,  
placing on the market and  
use of certain dangerous  
substances, mixtures and  
articles****Other EU regulations****Priority List Chemicals** : Listed**Integrated pollution  
prevention and control  
list (IPPC) - Air** : Not listed**Integrated pollution  
prevention and control  
list (IPPC) - Water** : Not listed**Industrial use** : The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.**International regulations****Chemical Weapons  
Convention List Schedule I  
Chemicals** : Not listed**Chemical Weapons  
Convention List Schedule II  
Chemicals** : Not listed**Chemical Weapons  
Convention List Schedule III  
Chemicals** : Not listed**15.2 Chemical Safety  
Assessment** : This product contains substances for which Chemical Safety Assessments are still required.**SECTION 16: Other information****EU statistical classification  
(Tariff Code)** : 38249097 Indicates information that has changed from previously issued version.**Abbreviations and  
acronyms** : ATE = Acute Toxicity Estimate  
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
DNEL = Derived No Effect Level  
EUH statement = CLP-specific Hazard statement  
PNEC = Predicted No Effect Concentration  
RRN = REACH Registration Number**Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

**SECTION 16: Other information**

Flam. Liq. 3, H226  
 Skin Irrit. 2, H315  
 Eye Irrit. 2, H319  
 Skin Sens. 1, H317  
 STOT SE 3, H336

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

Classification	Justification
Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 STOT SE 3, H336	On basis of test data Calculation method Calculation method Calculation method Calculation method

**Full text of abbreviated H statements** :

- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.
- H332 Harmful if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.

**Full text of classifications [CLP/GHS]** :

- Acute Tox. 3, H331 ACUTE TOXICITY: INHALATION - Category 3
- Acute Tox. 4, H302 ACUTE TOXICITY: ORAL - Category 4
- Acute Tox. 4, H312 ACUTE TOXICITY: SKIN - Category 4
- Acute Tox. 4, H332 ACUTE TOXICITY: INHALATION - Category 4
- Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
- Flam. Liq. 2, H225 FLAMMABLE LIQUIDS - Category 2
- Flam. Liq. 3, H226 FLAMMABLE LIQUIDS - Category 3
- Resp. Sens. 1, H334 RESPIRATORY SENSITIZATION - Category 1
- Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
- Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1
- STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] - Category 3
- STOT SE 3, H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Narcotic effects] - Category 3

**Full text of abbreviated R phrases** :

- R11- Highly flammable.
- R10- Flammable.
- R23- Toxic by inhalation.
- R20- Harmful by inhalation.
- R20/21- Harmful by inhalation and in contact with skin.
- R21/22- Harmful in contact with skin and if swallowed.
- R38- Irritating to skin.
- R36/37/38- Irritating to eyes, respiratory system and skin.
- R43- May cause sensitisation by skin contact.
- R42/43- May cause sensitisation by inhalation and skin contact.
- R66- Repeated exposure may cause skin dryness or cracking.
- R67- Vapours may cause drowsiness and dizziness.

**Full text of classifications [DSD/DPD]** :

- F - Highly flammable
- T - Toxic
- Xn - Harmful
- Xi - Irritant

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**SECTION 16: Other information****FOR PROFESSIONAL USE ONLY**

**IMPORTANT NOTE** The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.

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**Head Office**

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## SAFETY DATA SHEET

Thinner C25/90S

## Section 1. Identification

GHS product identifier : Thinner C25/90S  
SDS code : A36900

## Relevant identified uses of the substance or mixture and uses advised against

Identified uses
Industrial use
Uses advised against
Consumer use

**Manufacturer** : Akzo Nobel Coatings, Inc.  
1 East Water Street  
Waukegan, IL 60085  
USA  
Tel. 1 847 623 4200  
Email: customer.service@akzonobel.com  
Akzo Nobel Coatings Ltd.  
110 Woodbine Downs Blvd.  
Unit #4 Etobicoke, Ontario  
Canada M9W 5S6  
+1 (800) 618-1010

**Importer** : Cía. Mexicana de Pinturas International  
S.A. de C.V., Carretera Anillo Periférico,  
No Ext 205, No Interior A, Colonia HDA S JOSE, Garcia, Garcia, CP 66000, Nuevo  
Leon.  
RFC: ANA9510267C4

**Emergency telephone number (with hours of operation)** : CHEMTREC +1 (800) 424-9300 (Inside the US)  
CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 2  
EYE IRRITATION - Category 2A  
CARCINOGENICITY - Category 2  
TOXIC TO REPRODUCTION (Unborn child) - Category 1B  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

## GHS label elements

Date of issue/Date of revision : 1/19/2023 Version : 1.04  
Date of previous issue : 1/6/2023 1/16

## Section 2. Hazards identification



Signal word : Danger

Hazard statements : Highly flammable liquid and vapor.  
Causes serious eye irritation.  
May damage the unborn child.  
Suspected of causing cancer.  
May cause drowsiness or dizziness.

### Precautionary statements

**Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear protective clothing. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.

**Response** : IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

**Storage** : Store locked up.

**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

## Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
butanone	≥25 - ≤50	78-93-3
2-methoxy-1-methylethyl acetate	≥25 - ≤50	108-65-6
Isopropyl alcohol	≥10 - ≤20	67-63-0
4-methylpentan-2-one	≥10 - <20	108-10-1
2-methoxypropyl acetate	≤0.3	70657-70-4

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

## Section 4. First aid measures

- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Can cause central nervous system (CNS) depression.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

## Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
butanone	<p><b>ACGIH TLV (United States, 3/2019). Notes: Substances for which there is a Biological Exposure Index or Indices</b></p> <p>STEL: 885 mg/m<sup>3</sup> 15 minutes.  STEL: 300 ppm 15 minutes.  TWA: 590 mg/m<sup>3</sup> 8 hours.  TWA: 200 ppm 8 hours.</p> <p><b>NIOSH REL (United States, 10/2016).</b></p> <p>STEL: 885 mg/m<sup>3</sup> 15 minutes.  STEL: 300 ppm 15 minutes.  TWA: 590 mg/m<sup>3</sup> 10 hours.  TWA: 200 ppm 10 hours.</p> <p><b>OSHA PEL (United States, 5/2018).</b></p> <p>TWA: 590 mg/m<sup>3</sup> 8 hours.  TWA: 200 ppm 8 hours.</p>

## Section 8. Exposure controls/personal protection

2-methoxy-1-methylethyl acetate

Isopropyl alcohol

4-methylpentan-2-one

2-methoxypropyl acetate

**OSHA PEL 1989 (United States, 3/1989).**STEL: 885 mg/m<sup>3</sup> 15 minutes.

STEL: 300 ppm 15 minutes.

TWA: 590 mg/m<sup>3</sup> 8 hours.

TWA: 200 ppm 8 hours.

**AIHA WEEL (United States, 7/2018).**

TWA: 50 ppm 8 hours.

**ACGIH TLV (United States, 3/2019). Notes:  
Refers to Appendix A -- Carcinogens.****ACGIH 2003 Adoption**

STEL: 400 ppm 15 minutes.

TWA: 200 ppm 8 hours.

**NIOSH REL (United States, 10/2016).**STEL: 1225 mg/m<sup>3</sup> 15 minutes.

STEL: 500 ppm 15 minutes.

TWA: 980 mg/m<sup>3</sup> 10 hours.

TWA: 400 ppm 10 hours.

**OSHA PEL (United States, 5/2018).**TWA: 980 mg/m<sup>3</sup> 8 hours.

TWA: 400 ppm 8 hours.

**OSHA PEL 1989 (United States, 3/1989).**STEL: 1225 mg/m<sup>3</sup> 15 minutes.

STEL: 500 ppm 15 minutes.

TWA: 980 mg/m<sup>3</sup> 8 hours.

TWA: 400 ppm 8 hours.

**ACGIH TLV (United States, 3/2019). Notes:  
Substances for which there is a Biological  
Exposure Index or Indices**

STEL: 75 ppm 15 minutes.

TWA: 20 ppm 8 hours.

**NIOSH REL (United States, 10/2016).**STEL: 300 mg/m<sup>3</sup> 15 minutes.

STEL: 75 ppm 15 minutes.

TWA: 205 mg/m<sup>3</sup> 10 hours.

TWA: 50 ppm 10 hours.

**OSHA PEL (United States, 5/2018).**TWA: 410 mg/m<sup>3</sup> 8 hours.

TWA: 100 ppm 8 hours.

**OSHA PEL 1989 (United States, 3/1989).**STEL: 300 mg/m<sup>3</sup> 15 minutes.

STEL: 75 ppm 15 minutes.

TWA: 205 mg/m<sup>3</sup> 8 hours.

TWA: 50 ppm 8 hours.

None.

**Appropriate engineering controls**

- : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls**

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Individual protection measures**



## Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

**Physical state** : Liquid.

**Color** : Colorless.

**Odor** : Typical.

**Odor threshold** : Not available.

**pH** : Not available.

**Melting/freezing point** : Not available.

**Boiling point** : 80°C (176°F)

**boiling range** : Not available.

**Flash point** : Closed cup: 2°C (35.6°F)

**Evaporation rate** : Not available.

**Flammability (solid, gas)** : Not available.

### Upper/lower flammability or explosive limits

**Upper:** : Not determined.

**Lower:** : Not determined.

**Vapor pressure** : Not available.

**Vapor density** : Not available.

**Relative density** : 0.85

**Density** : 7.09 lbs/gal      0.85 g/cm<sup>3</sup>

**Solubility** : Not available.

**Solubility in water** : Not available.

## Section 9. Physical and chemical properties

<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: Not available.
<b>Decomposition temperature</b>	: Not available.
<b>Viscosity</b>	: Kinematic (room temperature): 0.47 cm <sup>2</sup> /s (47 cSt) Kinematic (40°C (104°F)): 0.04 cm <sup>2</sup> /s (4 cSt)
<b>Weight Volatiles</b>	: 100% (w/w)
<b>Volume Volatiles</b>	: 100.00 % (v/v)
<b>Weight Solids</b>	: 0.00 % (w/w)
<b>Volume Solids</b>	: 0 % (v/v)
<b>Regulatory VOC</b>	: 7.1 lbs/gal 850 g/l minus water and exempt solvents
<b>VOC Actual</b>	: 7.1 lbs/gal 850 g/l

## Section 10. Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
<b>Incompatible materials</b>	: Reactive or incompatible with the following materials: oxidizing materials
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
butanone	LC50 Inhalation Vapor	Mouse	32 g/m <sup>3</sup>	4 hours
	LC50 Inhalation Vapor	Rat	23500 mg/m <sup>3</sup>	8 hours
	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Intraperitoneal	Guinea pig	2 g/kg	-
	LD50 Intraperitoneal	Mouse	616 mg/kg	-
	LD50 Intraperitoneal	Rat	607 mg/kg	-
	LD50 Oral	Mouse	3000 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-
	LD50 Dermal	Rabbit	>5 g/kg	-
2-methoxy-1-methylethyl acetate	LD50 Intraperitoneal	Mouse	750 mg/kg	-
	LD50 Intraperitoneal	Mouse	>1500 mg/kg	-
	LD50 Oral	Mouse	>5000 mg/kg	-
	LD50 Oral	Rat	8532 mg/kg	-
	LD50 Oral	Rat	9000 mg/kg	-
Isopropyl alcohol	LC50 Inhalation Gas.	Rat	16000 ppm	8 hours
	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Intraperitoneal	Guinea pig	2560 mg/kg	-
	LD50 Intraperitoneal	Mouse	4477 mg/kg	-

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8/16



## Section 11. Toxicological information

4-methylpentan-2-one	LD50 Intraperitoneal	Rabbit	667 mg/kg	-
	LD50 Intraperitoneal	Rat	2735 mg/kg	-
	LD50 Intravenous	Mouse	1509 mg/kg	-
	LD50 Intravenous	Rabbit	1184 mg/kg	-
	LD50 Intravenous	Rat	1088 mg/kg	-
	LD50 Oral	Mouse	3600 mg/kg	-
	LD50 Oral	Mouse	3600 mg/kg	-
	LD50 Oral	Rabbit	6410 mg/kg	-
	LD50 Oral	Rat	5045 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
	LC50 Inhalation Vapor	Rat - Male, Female	11.6 mg/l	4 hours
	LD50 Intraperitoneal	Guinea pig	800 mg/kg	-
	LD50 Intraperitoneal	Mouse	268 mg/kg	-
	LD50 Intraperitoneal	Rat	400 mg/kg	-
	LD50 Oral	Guinea pig	1600 mg/kg	-
	LD50 Oral	Mouse	1900 mg/kg	-
	LD50 Oral	Mouse	2850 mg/kg	-
	LD50 Oral	Rat	2080 mg/kg	-
	LD50 Oral	Rat	4600 mg/kg	-

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
butanone	Skin - Mild irritant	Rabbit	-	24 hours 14 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 402 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
Isopropyl alcohol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Eyes - Severe irritant	Rabbit	-	100 mg	-
4-methylpentan-2-one	Skin - Mild irritant	Rabbit	-	500 mg	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 UI	-
	Eyes - Severe irritant	Rabbit	-	40 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Classification

Product/ingredient name	OSHA	IARC	NTP
Isopropyl alcohol	-	3	-
4-methylpentan-2-one	-	2B	-

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

## Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
butanone	Category 3	Not applicable.	Narcotic effects
2-methoxy-1-methylethyl acetate	Category 3	Not applicable.	Narcotic effects
Isopropyl alcohol	Category 3	Not applicable.	Narcotic effects
4-methylpentan-2-one	Category 3	Not applicable.	Respiratory tract irritation
2-methoxypropyl acetate	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : Causes serious eye irritation.

**Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : Can cause central nervous system (CNS) depression.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

**Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Skin contact** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

## Section 11. Toxicological information

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : May damage the unborn child.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Inhalation (vapors)	93.73 mg/l

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
butanone	Acute EC50 >500000 µg/l Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 >500 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
Isopropyl alcohol	Acute EC50 5091000 µg/l Fresh water	Daphnia - Daphnia magna - Larvae	48 hours
	Acute LC50 3220000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 5600 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
	Acute EC50 10100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute EC50 7550 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute EC50 9550 mg/l Fresh water	Fish - Pimephales promelas	96 hours
4-methylpentan-2-one	Acute LC50 1400000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 6550000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 9640000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 10400000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 4200 mg/l Fresh water	Fish - Rasbora heteromorpha	96 hours
	Acute LC50 505000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 540000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 537000 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 168 mg/l Fresh water	Fish - Pimephales promelas - Embryo	33 days

### Persistence and degradability

Not available.

### Bioaccumulative potential

Date of issue/Date of revision : 1/19/2023

Date of previous issue : 1/6/2023

Version : 1.04

11/16

## Section 12. Ecological information

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
butanone	0.3	-	low
2-methoxy-1-methylethyl acetate	1.2	-	low
Isopropyl alcohol	0.05	-	low
4-methylpentan-2-one	1.9	-	low

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.






Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

The information provided in section 14 is based on a bulk package shipment via ground transport in North America. All shippers are responsible for ensuring the proper transportation classification and package/container requirements are followed for the relevant mode of transport.

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	II	II	II	II	II
Environmental hazards	No.	No.	No.	No.	No.

### Additional information

**DOT Classification** : **Reportable quantity** 14084.5 lbs / 6394.4 kg [1987.3 gal / 7522.8 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.  
**Special provisions** 383

## Section 14. Transport information

**TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).

**IMDG** : **Emergency schedules** F-E, \_S-E\_

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL and the IBC Code** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : **TSCA 5(a)2 final significant new use rules:** No products found.  
**TSCA 5(e) substance consent order:** No products found.  
**TSCA 8(a) PAIR:** 2-methoxy-1-methylethyl acetate  
**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**United States inventory (TSCA 8b):** All components are listed or exempted.

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Listed

### SARA 302/304

#### Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
No products were found.						

### SARA 311/312

**Classification** : FLAMMABLE LIQUIDS - Category 2  
 EYE IRRITATION - Category 2A  
 CARCINOGENICITY - Category 2  
 TOXIC TO REPRODUCTION (Unborn child) - Category 1B  
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

#### Composition/information on ingredients

Name	%	Classification
butanone	≥25 - ≤50	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
2-methoxy-1-methylethyl acetate	≥25 - ≤50	FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
propan-2-ol	≥10 - ≤20	FLAMMABLE LIQUIDS - Category 2

## Section 15. Regulatory information

4-methylpentan-2-one	≥10 - <20	EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 FLAMMABLE LIQUIDS - Category 3
2-methoxypropyl acetate	≤0.3	TOXIC TO REPRODUCTION (Unborn child) - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

### SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	4-methylpentan-2-one	108-10-1	≥10 - <20
Supplier notification	4-methylpentan-2-one	108-10-1	≥10 - <20

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

<b>Massachusetts</b>	: The following components are listed: METHYL ETHYL KETONE; 2-BUTANONE; MEK; ISOPROPYL ALCOHOL; 2-PROPANOL; METHYL ISOBUTYL KETONE; 4-METHYL-2-PENTANONE
<b>New York</b>	: The following components are listed: Methyl ethyl ketone; 2-Butanone; Methyl isobutyl ketone; Hexone
<b>New Jersey</b>	: The following components are listed: METHYL ETHYL KETONE; 2-BUTANONE; ISOPROPYL ALCOHOL; 2-PROPANOL; METHYL ISOBUTYL KETONE; 2-PENTANONE, 4-METHYL-
<b>Pennsylvania</b>	: The following components are listed: 2-BUTANONE; 2-PROPANOL; 2-PENTANONE, 4-METHYL-

### California Prop. 65

 **WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Ingredient name	No significant risk level	Maximum acceptable dosage level
4-methylpentan-2-one	-	-

### Inventory list

<b>Australia</b>	: All components are listed or exempted.
<b>Canada</b>	: All components are listed or exempted.
<b>China</b>	: All components are listed or exempted.
<b>Europe</b>	: All components are listed or exempted.
<b>Japan</b>	: <b>Japan inventory (ENCS):</b> All components are listed or exempted. <b>Japan inventory (ISHL):</b> All components are listed or exempted.
<b>Malaysia</b>	: All components are listed or exempted.
<b>New Zealand</b>	: All components are listed or exempted.
<b>Philippines</b>	: All components are listed or exempted.
<b>Republic of Korea</b>	: All components are listed or exempted.
<b>Taiwan</b>	: All components are listed or exempted.
<b>Thailand</b>	: At least one component is not listed.
<b>Turkey</b>	: All components are listed or exempted.

## Section 15. Regulatory information

**Viet Nam** : At least one component is not listed.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0

**Caution:** HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

### Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 TOXIC TO REPRODUCTION (Unborn child) - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	On basis of test data Calculation method Calculation method Calculation method Calculation method

### History

<b>Date of printing</b>	: 19 January 2023
<b>Date of issue/ Date of revision</b>	: 19 January 2023
<b>Date of previous issue</b>	: 6 January 2023
<b>Version</b>	: 1.04
<b>Key to abbreviations</b>	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

Indicates information that has changed from previously issued version.

### Notice to reader

FOR PROFESSIONAL USE ONLY

**IMPORTANT NOTE** The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws. Any person using this product must determine for themselves, by preliminary tests or otherwise, the suitability of this product for their purposes. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Safety Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. The application, use and processing of AkzoNobel's products and the products manufactured by Buyer on the basis of AkzoNobel's technical advice are beyond AkzoNobel's control and, therefore, entirely Buyer's own responsibility. AkzoNobel makes no warranty as to accuracy and/or sufficiency of such information and/or suggestions, as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nothing contained herein shall be construed as granting or

<b>Date of issue/Date of revision</b>	: 1/19/2023	<b>Version</b>	: 1.04
<b>Date of previous issue</b>	: 1/6/2023		15/16



## Section 16. Other information

extending any license under any patent. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.

IA\_493







# SAFETY DATA SHEET

Issuing Date: 08-May-2015

Revision Date: 26-Dec-2017

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: PG-6-C1

Product Name: HIGH SOLIDS POLYURETHANE TOPCOAT  
GLOSS BAC-900 CLEAR

Hentzen Coatings, Inc.  
6937 West Mill Road, Milwaukee, WI 53218-1225

Company Phone Number: 1-414-353-4200

Emergency telephone number ChemTrec 1-800-424-9300

Recommended use of the chemical and restrictions on use Industrial paint (Paint or Paint-Related), Restricted to professional users

## 2. HAZARDS IDENTIFICATION

### Classification

#### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin Corrosion/Irritation	Category 2
Serious eye damage/eye irritation	Category 2
Carcinogenicity	Category 2
Reproductive Toxicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 2
Flammable Liquids	Category 2

### Label Elements

#### Emergency Overview

**DANGER**

#### Hazard Statements

harmful if inhaled  
Causes skin irritation  
Causes serious eye irritation  
Suspected of causing cancer  
Suspected of damaging fertility or the unborn child  
May cause damage to organs through prolonged or repeated exposure  
Highly flammable liquid and vapor



**Appearance** Clear

**Physical state** Liquid

**Odor** Solvent

#### Precautionary Statements - Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Use only outdoors or in a well-ventilated area

Wash face, hands and any exposed skin thoroughly after handling  
Wear eye/face protection  
Do not breathe dust/fume/gas/mist/vapors/spray  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/Bond container and receiving equipment  
Use explosion-proof electrical/ ventilating/ lighting/ equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
If skin irritation occurs: Get medical advice/attention  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool  
Store in accordance with local regulations

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

**Other information**

- May be harmful if swallowed
- May be harmful in contact with skin
- Harmful to aquatic life

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Contains a known or suspected carcinogen**

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
XYLENE(PURE)	1330-20-7	10% - 20%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
METHYL AMYL KETONE	110-43-0	10% - 20%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
ETHYL ACETATE	141-78-6	5% - 10%	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>
BUTYL ACETATE	123-86-4	1% - 5%	STEL: 150 ppm TWA: 50 ppm	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup>
TOLUENE	108-88-3	1% - 5%	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm
ETHYLBENZENE	100-41-4	1% - 5%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	108-10-1	0% - 1%	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>

**4. FIRST AID MEASURES**

**First Aid Measures**

General advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Eye Contact	Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with plenty of water.
Inhalation	Consult a physician if necessary. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.
Ingestion	Do NOT induce vomiting.
Self-protection of the first aider	Remove all sources of ignition.
<b>Most important symptoms and effects, both acute and delayed</b>	
Most Important Symptoms and Effects	No information available.
<b>Indication of any immediate medical attention and special treatment needed</b>	
Notes to physician	Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

### Specific hazards arising from the chemical

Extremely flammable.

#### Explosion Data

**Sensitivity to Mechanical Impact** no data available.

**Sensitivity to Static Discharge** Yes.

### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment as required. Avoid breathing vapors or mists. Ventilate the area.

### Environmental Precautions

**Environmental Precautions** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

### Methods and materials for containment and cleaning up

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Cleaning Up**

Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on safe handling**

Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use explosion-proof electrical (ventilation and lighting) equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep away from heat, sparks and flame.

**Incompatible Products**

None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH	OSHA	NIOSH IDLH
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
TERTIARY BUTYL ACETATE 540-88-5	STEL: 150 ppm TWA: 50 ppm	TWA: 200 ppm TWA: 950 mg/m <sup>3</sup>	IDLH: 1500 ppm TWA: 200 ppm TWA: 950 mg/m <sup>3</sup>
ETHYL ACETATE 141-78-6	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>	IDLH: 2000 ppm TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>
BUTYL ACETATE 123-86-4	STEL: 150 ppm TWA: 50 ppm	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup>	IDLH: 1700 ppm TWA: 150 ppm TWA: 710 mg/m <sup>3</sup> STEL: 200 ppm STEL: 950 mg/m <sup>3</sup>
TOLUENE 108-88-3	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE 108-10-1	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m <sup>3</sup> STEL: 75 ppm STEL: 300 mg/m <sup>3</sup>

NIOSH IDLH: Immediately Dangerous to Life or Health

**Exposure controls**

**Engineering Measures**  
Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** Use personal protective equipment as required.

**Skin and Body Protection** Chemical resistant apron.

**Respiratory Protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene Measures** Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical state</b>	Liquid	<b>Appearance</b>	Clear
<b>Odor</b>	Solvent.	<b>Odor Threshold</b>	No data available
<b>pH</b>	No data available	<b>Flash Point</b>	12 °F / -11 °C
<b>Decomposition temperature</b>	No data available	<b>Boiling Point</b>	170 °F / 77 °C
<b>Melting Point / Melting Range</b>	No data available	<b>Freezing Point</b>	No data available
<b>Vapor Pressure @20°C (kPa)</b>	No data available	<b>Partition coefficient:</b>	No data available
<b>Vapor Density</b>	No data available	<b>Density</b>	No data available
<b>Bulk density</b>	No data available	<b>Specific Gravity</b>	0.98
<b>Evaporation Rate</b>	No data available	<b>Water solubility</b>	No data available
<b>Dynamic viscosity</b>	No data available	<b>Weight per Gallon (lbs/gal):</b>	8.13
		<b>Flammability Limits in Air</b>	
		Upper	3.45 %
		Lower	0.6 %

**10. STABILITY AND REACTIVITY**

**Reactivity**  
No data available

**Chemical stability**  
Stable under recommended storage conditions.

**Conditions to Avoid**  
Extremes of temperature and direct sunlight.

**Incompatible Materials**  
None known based on information supplied.

**Hazardous Decomposition Products**  
None known based on information supplied.

**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Product Information** The product has not been tested

**Inhalation** There is no data for this product.

**Eye Contact** There is no data for this product.

**Skin Contact** There is no data for this product.

**Ingestion** There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
XYLENE(PURE) 1330-20-7	= 3500 mg/kg ( Rat )	> 4350 mg/kg ( Rabbit )	= 29.08 mg/L ( Rat ) 4 h
METHYL AMYL KETONE 110-43-0	= 1600 mg/kg ( Rat )	= 12.6 mL/kg ( Rabbit )	2000 - 4000 ppm ( Rat ) 6 h
TERTIARY BUTYL ACETATE 540-88-5	= 4100 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 9482 mg/m <sup>3</sup> ( Rat ) 4 h
ETHYL ACETATE 141-78-6	= 5620 mg/kg ( Rat )	> 18000 mg/kg ( Rabbit )	N/A
BUTYL ACETATE 123-86-4	= 10768 mg/kg ( Rat )	> 17600 mg/kg ( Rabbit )	= 390 ppm ( Rat ) 4 h
TOLUENE 108-88-3	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h
ETHYLBENZENE 100-41-4	= 3500 mg/kg ( Rat )	= 15400 mg/kg ( Rabbit )	= 17.4 mg/L ( Rat ) 4 h
METHYL ISOBUTYL KETONE 108-10-1	= 2080 mg/kg ( Rat )	= 3000 mg/kg ( Rabbit )	= 8.2 mg/L ( Rat ) 4 h

#### Information on toxicological effects

**Symptoms** No information available.

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Sensitization** No information available.  
**MUTAGENIC EFFECTS** No information available.  
**Carcinogenicity** This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
TOLUENE 108-88-3	N/A	Group 3	N/A	N/A
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	N/A	X

#### **Legend:**

ACGIH (American Conference of Governmental Industrial Hygienists)  
A3 - Animal Carcinogen  
IARC (International Agency for Research on Cancer)  
Group 2B - Possibly Carcinogenic to Humans  
Group 3 - Not Classifiable as to Carcinogenicity in Humans  
OSHA (Occupational Safety and Health Administration of the US Department of Labor)  
X - Present

**Reproductive Toxicity** No information available.  
**Specific target organ systemic toxicity (single exposure)** No information available.  
**Specific target organ systemic toxicity (repeated exposure)** No information available.  
**Chronic Toxicity** May cause adverse liver effects.  
**Target Organ Effects** Central nervous system (CNS), Eyes, Kidney, Liver, Peripheral Nervous System (PNS), Respiratory system, Skin.  
**Aspiration hazard** No information available.

#### Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	3120 mg/kg
ATEmix (dermal)	2859 mg/kg
ATEmix (inhalation-dust/mist)	2.8 mg/l
Oral LD50	6481 mg/kg (rat) Estimated
Dermal LD50	11561 mg/kg (rat) Estimated

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
XYLENE(PURE) 1330-20-7	N/A	13.1 - 16.5: 96 h <i>Lepomis macrochirus</i> mg/L LC50 flow-through 13.5 - 17.3: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 2.661 - 4.093: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 23.53 - 29.97: 96 h <i>Pimephales promelas</i> mg/L LC50 static 30.26 - 40.75: 96 h <i>Poecilia reticulata</i> mg/L LC50 static 7.711 - 9.591: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 13.4: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 19: 96 h <i>Lepomis macrochirus</i> mg/L LC50 780: 96 h <i>Cyprinus carpio</i> mg/L LC50 semi-static 780: 96 h <i>Cyprinus carpio</i> mg/L LC50	0.6: 48 h <i>Gammarus lacustris</i> mg/L LC50 3.82: 48 h water flea mg/L EC50
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through	N/A
TERTIARY BUTYL ACETATE 540-88-5	N/A	296 - 362: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through	N/A
ETHYL ACETATE 141-78-6	N/A	220 - 250: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 352 - 500: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 semi-static 484: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through	560: 48 h <i>Daphnia magna</i> mg/L EC50 Static
BUTYL ACETATE 123-86-4	674.7: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50	17 - 19: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 100: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static	N/A
TOLUENE 108-88-3	12.5: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 433: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50	11.0 - 15.0: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 14.1 - 17.16: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 15.22 - 19.05: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 5.89 - 7.81: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through 50.87 - 70.34: 96 h <i>Poecilia reticulata</i> mg/L LC50 static 12.6: 96 h <i>Pimephales promelas</i> mg/L LC50 static 28.2: 96 h <i>Poecilia reticulata</i> mg/L LC50 semi-static 5.8: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 semi-static 54: 96 h <i>Oryzias latipes</i> mg/L LC50 static	5.46 - 9.83: 48 h <i>Daphnia magna</i> mg/L EC50 Static 11.5: 48 h <i>Daphnia magna</i> mg/L EC50
ETHYLBENZENE 100-41-4	1.7 - 7.6: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 2.6 - 11.3: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 4.6: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 438: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50	11.0 - 18.0: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 7.55 - 11: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 9.1 - 15.6: 96 h <i>Pimephales promelas</i> mg/L LC50 static 32: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 4.2: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50	1.8 - 2.4: 48 h <i>Daphnia magna</i> mg/L EC50



		semi-static 9.6: 96 h Poecilia reticulata mg/L LC50 static	
METHYL ISOBUTYL KETONE 108-10-1	400: 96 h Pseudokirchneriella subcapitata mg/L EC50	496 - 514: 96 h Pimephales promelas mg/L LC50 flow-through	170: 48 h Daphnia magna mg/L EC50

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

Chemical Name	Partition coefficient
XYLENE(PURE) 1330-20-7	3.15
METHYL AMYL KETONE 110-43-0	1.98
ETHYL ACETATE 141-78-6	0.6
BUTYL ACETATE 123-86-4	1.81
TOLUENE 108-88-3	2.7
ETHYLBENZENE 100-41-4	3.2
METHYL ISOBUTYL KETONE 108-10-1	1.19

**Other adverse effects**

No information available

### 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Waste treatment methods**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**US EPA Waste Number**

D001

Chemical Name	RCRA - Basis for Listing	RCRA - D Series Wastes
XYLENE(PURE) 1330-20-7	Included in waste stream: F039	N/A
ETHYL ACETATE 141-78-6	Included in waste stream: F039	N/A
TOLUENE 108-88-3	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151	N/A
ETHYLBENZENE 100-41-4	Included in waste stream: F039	N/A
METHYL ISOBUTYL KETONE 108-10-1	Included in waste stream: F039	N/A

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
TOLUENE 108-88-3	N/A	N/A	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths	N/A

			ranging from one to and including five, with varying amounts and positions of chlorine substitution.	
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This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
XYLENE(PURE) 1330-20-7	Toxic Ignitable
ETHYL ACETATE 141-78-6	Toxic Ignitable
BUTYL ACETATE 123-86-4	Toxic
TOLUENE 108-88-3	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable

#### 14. TRANSPORT INFORMATION

##### DOT

UN-No UN1263  
Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Special Provisions 149, B52, IB2, T4, TP1, TP8, TP28  
Description UN1263, Paint, 3, II, RQ  
Emergency Response Guide Number 128

##### TDG

UN-No UN1263  
Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Description UN1263, Paint, 3, II

##### MEX

UN-No UN1263  
Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Description UN1263, Paint, 3, II

##### ICAO

UN-No UN1263  
Proper shipping name Paint  
Hazard class 3  
Packing Group II  
Special Provisions A3, A72  
Description UN1263, Paint, 3, II

##### IATA

UN-No UN1263  
Hazard class 3  
Packing Group II  
ERG Code 3L  
Special Provisions A3, A72, A192

##### IMDG/IMO

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

**RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, 3, II

**ADR/RID**

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, 3, II, (D/E)
ADR/RID-Labels	3

**ADN**

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, 3, II
Hazard Labels	3
Limited Quantity (LQ)	5 L
Ventilation	VE01

**15. REGULATORY INFORMATION**

**International Inventories**

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
XYLENE(PURE)	1330-20-7	1.0
TOLUENE	108-88-3	1.0
ETHYLBENZENE	100-41-4	0.1

**SARA 311/312 Hazard Categories**

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

**CAA (Clean Air Act)**

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
XYLENE(PURE)	1330-20-7	Present
TOLUENE	108-88-3	Present
ETHYLBENZENE	100-41-4	Present
METHYL ISOBUTYL KETONE	108-10-1	Present

**Clean Water Act**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
XYLENE(PURE)	100 lb	N/A	N/A	X
TERTIARY BUTYL ACETATE	N/A	N/A	N/A	X
BUTYL ACETATE	5000 lb	N/A	N/A	X
TOLUENE	1000 lb	X	X	X
ETHYLBENZENE	1000 lb	X	X	X

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
TERTIARY BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
ETHYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
TOLUENE	1000 lb 1 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ RQ 1 lb final RQ RQ 0.454 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ
METHYL ISOBUTYL KETONE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

**State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
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TOLUENE	108-88-3	Developmental
ETHYLBENZENE	100-41-4	Carcinogen
METHYL ISOBUTYL KETONE	108-10-1	Carcinogen Developmental

### U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
XYLENE(PURE)	X	X	X	X	X
METHYL AMYL KETONE	X	X	X	N/A	N/A
TERTIARY BUTYL ACETATE	X	X	X	N/A	N/A
ETHYL ACETATE	X	X	X	N/A	N/A
BUTYL ACETATE	X	X	X	N/A	N/A
TOLUENE	X	X	X	X	X
ETHYLBENZENE	X	X	X	X	X
METHYL ISOBUTYL KETONE	X	X	X	X	N/A

### International Regulations

#### Mexico - Grade

Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 150 ppm Mexico: STEL 655 mg/m <sup>3</sup>
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m <sup>3</sup> Mexico: STEL 100 ppm Mexico: STEL 465 mg/m <sup>3</sup>
TERTIARY BUTYL ACETATE	N/A	Mexico: TWA 200 ppm Mexico: TWA 950 mg/m <sup>3</sup> Mexico: STEL 250 ppm Mexico: STEL 1190 mg/m <sup>3</sup>
ETHYL ACETATE	N/A	Mexico: TWA 400 ppm Mexico: TWA 1400 mg/m <sup>3</sup>
BUTYL ACETATE	N/A	Mexico: TWA 150 ppm Mexico: TWA 710 mg/m <sup>3</sup> Mexico: STEL 200 ppm Mexico: STEL 950 mg/m <sup>3</sup>
TOLUENE	N/A	Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>
ETHYLBENZENE	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m <sup>3</sup> Mexico: STEL 125 ppm Mexico: STEL 545 mg/m <sup>3</sup>
METHYL ISOBUTYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 205 mg/m <sup>3</sup> Mexico: STEL 75 ppm Mexico: STEL 307 mg/m <sup>3</sup>

## 16. OTHER INFORMATION

NFPA Health Hazard 2 Flammability 3 Instability 0 Physical and Chemical Hazards -

NFPA Rating



**HMIS**      **Health Hazard** 1 \*    **Flammability** 3      **Physical Hazard** 0    **Personal protection** X

*Chronic Hazard Star Legend*

*\* Chronic Health Hazard*

**Issuing Date:** 08-May-2015

**Revision Date:** 26-Dec-2017

**Revision Note**

No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. PG-6-C1GV

end



# SAFETY DATA SHEET



Date of issue/Date of revision 13 June 2022

Version 5

## Section 1. Identification

**Product name** : CA8201/F17875 BASE COMPONENT  
**Product code** : CA8201/F17875 BASE COMPONENT  
**Other means of identification** : Not available.  
**Product type** : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

**Product use** : Industrial applications.  
**Use of the substance/ mixture** : Coating.  
**Uses advised against** : Not applicable.

**Manufacturer** : PPG Aerospace PRC-DeSoto  
12780 San Fernando Road  
Sylmar, CA 91342  
Phone: 818 362 6711

**Emergency telephone number** : (412) 434-4515 (U.S.)  
(514) 645-1320 (Canada)  
01-800-00-21-400 (Mexico)

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 3  
CARCINOGENICITY - Category 2  
TOXIC TO REPRODUCTION - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 11% (oral), 12% (dermal), 31% (inhalation)

This product contains TiO<sub>2</sub> which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many PPG products, TiO<sub>2</sub> is utilized as a raw material in a liquid coating formulation. In this case, the TiO<sub>2</sub> particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO<sub>2</sub> when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8).

### GHS label elements



## Section 2. Hazards identification

**Hazard pictograms**

:

**Signal word**

: Warning

**Hazard statements**: Flammable liquid and vapor.  
Suspected of causing cancer.  
Suspected of damaging fertility or the unborn child.**Precautionary statements****Prevention**

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Keep container tightly closed.

**Response**

: IF exposed or concerned: Get medical advice or attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

**Storage**

: Store locked up. Store in a well-ventilated place. Keep cool.

**Disposal**

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Supplemental label elements**

: Sanding and grinding dusts may be harmful if inhaled. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

**Hazards not otherwise classified**

: Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition/information on ingredients

**Substance/mixture**

: Mixture

**Product name**

: CA8201/F17875 BASE COMPONENT

Ingredient name	%	CAS number
titanium dioxide	≥20 - ≤50	13463-67-7
heptan-2-one	≥10 - ≤17	110-43-0
xylene	≥1.0 - ≤3.0	1330-20-7
pentan-2-one	≤1.2	107-87-9
aluminium hydroxide	≥1.0 - ≤5.0	21645-51-2
toluene	<1.0	108-88-3
ethylbenzene	<1.0	100-41-4
propylidynetrimethanol	≤1.0	77-99-6
4-methylpentan-2-one	<1.0	108-10-1

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

## Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

### Description of necessary first aid measures

- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
irritation  
dryness  
cracking  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

## Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon oxides  
metal oxide/oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Special precautions** : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
titanium dioxide	<b>OSHA PEL (United States, 5/2018).</b> TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust <b>ACGIH TLV (United States, 1/2021).</b>
heptan-2-one	TWA: 10 mg/m <sup>3</sup> 8 hours. <b>ACGIH TLV (United States, 1/2021).</b> TWA: 233 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours. <b>OSHA PEL (United States, 5/2018).</b> TWA: 465 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
xylene	<b>ACGIH TLV (United States, 1/2021). [Xylene]</b> STEL: 651 mg/m <sup>3</sup> 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours. <b>OSHA PEL (United States, 5/2018).</b> <b>[Xylenes]</b> TWA: 435 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
pentan-2-one	<b>OSHA PEL (United States, 5/2018).</b> TWA: 700 mg/m <sup>3</sup> 8 hours. TWA: 200 ppm 8 hours. <b>ACGIH TLV (United States, 1/2021).</b> STEL: 150 ppm 15 minutes.
aluminium hydroxide	<b>ACGIH TLV (United States, 1/2021).</b> <b>[Aluminum, metal and insoluble compounds]</b> TWA: 1 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction <b>ACGIH TLV (United States).</b> TWA: 1 mg/m <sup>3</sup>
toluene	<b>OSHA PEL Z2 (United States, 2/2013).</b> AMP: 500 ppm 10 minutes. CEIL: 300 ppm TWA: 200 ppm 8 hours. <b>ACGIH TLV (United States, 1/2021).</b> <b>Ototoxicant.</b> TWA: 20 ppm 8 hours.
ethylbenzene	<b>ACGIH TLV (United States, 1/2021).</b> TWA: 20 ppm 8 hours. <b>OSHA PEL (United States, 5/2018).</b> TWA: 435 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
propylidynetrimethanol 4-methylpentan-2-one	None. <b>ACGIH TLV (United States, 1/2021).</b> STEL: 75 ppm 15 minutes. TWA: 20 ppm 8 hours. <b>OSHA PEL (United States, 5/2018).</b>

## Section 8. Exposure controls/personal protection

TWA: 410 mg/m<sup>3</sup> 8 hours.

TWA: 100 ppm 8 hours.

### Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

### Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety glasses with side shields.

#### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Gloves** : For prolonged or repeated handling, use the following type of gloves:

Recommended: butyl rubber, polyvinyl alcohol (PVA), Viton®

Not recommended: nitrile rubber

## Section 8. Exposure controls/personal protection

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The respiratory protection shall be in accordance to 29 CFR 1910.134.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : White.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not applicable.
- Melting point** : Not available.
- Boiling point** : >37.78°C (>100°F)
- Flash point** : Closed cup: 26.67°C (80°F)
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Evaporation rate** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 1.45
- Density ( lbs / gal )** : 12.1
- Solubility** : Insoluble in the following materials: cold water.
- Partition coefficient: n-octanol/water** : Not applicable.
- Viscosity** : Kinematic (40°C (104°F)): >21 mm<sup>2</sup>/s (>21 cSt)
- VOC** : 337 g/l
- % Solid. (w/w)** : 76.77



## Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
- Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
- Hazardous decomposition products** : Depending on conditions, decomposition products may include the following materials: carbon oxides metal oxide/oxides

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
titanium dioxide	LC50 Inhalation Dusts and mists	Rat	>6.82 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
heptan-2-one	LC50 Inhalation Vapor	Rat	16.7 mg/l	4 hours
	LD50 Dermal	Rabbit	10.206 g/kg	-
	LD50 Oral	Rat	1.6 g/kg	-
xylene	LD50 Dermal	Rabbit	1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
	LC50 Inhalation Vapor	Rat	25.5 mg/l	4 hours
pentan-2-one	LD50 Dermal	Rabbit	6500 mg/kg	-
	LD50 Oral	Rat	1600 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>5.09 mg/l	4 hours
aluminium hydroxide	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapor	Rat	49 g/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	8.39 g/kg	-
toluene	LD50 Oral	Rat	5580 mg/kg	-
	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
ethylbenzene	LD50 Oral	Rat	3.5 g/kg	-
	LD50 Dermal	Rabbit	10 g/kg	-
	LD50 Oral	Rat	14000 mg/kg	-
propylidynetrimethanol	LC50 Inhalation Vapor	Rat	11 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	2.08 g/kg	-

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Irritation/Corrosion



## Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

SensitizationConclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

MutagenicityConclusion/Summary : There are no data available on the mixture itself.CarcinogenicityConclusion/Summary : There are no data available on the mixture itself.Classification

Product/ingredient name	OSHA	IARC	NTP
titanium dioxide	-	2B	-
xylene	-	3	-
toluene	-	3	-
ethylbenzene	-	2B	-
4-methylpentan-2-one	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4

NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

OSHA: +

Not listed/not regulated: -

Reproductive toxicityConclusion/Summary : There are no data available on the mixture itself.TeratogenicityConclusion/Summary : There are no data available on the mixture itself.Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
heptan-2-one	Category 3	-	Narcotic effects
xylene	Category 3	-	Respiratory tract irritation
pentan-2-one	Category 3	-	Respiratory tract irritation
toluene	Category 3	-	Narcotic effects
4-methylpentan-2-one	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

## Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
toluene ethylbenzene	Category 2 Category 2	- -	- hearing organs

**Target organs** : Contains material which causes damage to the following organs: brain.  
Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, liver, peripheral nervous system, upper respiratory tract, immune system, skin, central nervous system (CNS), eye, lens or cornea.

### Aspiration hazard

Name	Result
xylene	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1

### Information on the likely routes of exposure

#### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : Defatting to the skin. May cause skin dryness and irritation.  
**Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

**Eye contact** : No specific data.  
**Inhalation** : Adverse symptoms may include the following:  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations  
**Skin contact** : Adverse symptoms may include the following:  
 irritation  
 dryness  
 cracking  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations  
**Ingestion** : Adverse symptoms may include the following:  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

### Delayed and immediate effects and also chronic effects from short and long term exposure

**Conclusion/Summary** : There are no data available on the mixture itself. This product contains TiO<sub>2</sub> which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many PPG products, TiO<sub>2</sub> is utilized as a raw material in a liquid coating formulation. In this case, the TiO<sub>2</sub> particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO<sub>2</sub> when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8). Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory

## Section 11. Toxicological information

system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

### Short term exposure

**Potential immediate effects** : There are no data available on the mixture itself.

**Potential delayed effects** : There are no data available on the mixture itself.

### Long term exposure

**Potential immediate effects** : There are no data available on the mixture itself.

**Potential delayed effects** : There are no data available on the mixture itself.

### Potential chronic health effects

**General** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

**Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : No known significant effects or critical hazards.

**Reproductive toxicity** : Suspected of damaging fertility or the unborn child.

### Numerical measures of toxicity

#### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
CA8201/F17875 BASE COMPONENT	7951.2	55133.9	N/A	57.7	5.6
heptan-2-one	1600	10206	N/A	16.7	1.5
xylene	4300	1700	N/A	11	1.5
pentan-2-one	1600	6500	N/A	25.5	N/A
toluene	5580	8390	N/A	49	N/A
ethylbenzene	3500	17800	N/A	17.8	1.5
propylidynetrimethanol	14000	10000	N/A	N/A	N/A
4-methylpentan-2-one	2080	N/A	N/A	11	1.5

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
<div> <div></div> titanium dioxide  heptan-2-one  ethylbenzene  propylidynetrimethanol  4-methylpentan-2-one </div>	Acute LC50 >100 mg/l Fresh water Acute LC50 131 mg/l Acute EC50 1.8 mg/l Fresh water Chronic NOEC 1 mg/l Fresh water Acute LC50 >1000 mg/l Acute LC50 >179 mg/l	Daphnia - Daphnia magna Fish Daphnia Daphnia - Ceriodaphnia dubia Fish Fish	48 hours 96 hours 48 hours - 96 hours 96 hours

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
<div> <div></div> heptan-2-one  ethylbenzene  4-methylpentan-2-one </div>	OECD 310 - OECD 301F	69 % - Readily - 28 days 79 % - Readily - 10 days 83 % - Readily - 28 days	- - -	- - -

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<div> <div></div> heptan-2-one  xylene  toluene  ethylbenzene  4-methylpentan-2-one </div>	- - - - -	- - - - -	Readily Readily Readily Readily Readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<div> <div></div> heptan-2-one  xylene  pentan-2-one  toluene  ethylbenzene  propylidynetrimethanol  4-methylpentan-2-one </div>	2.26 3.12 0.91 2.73 3.6 -0.47 1.9	- 7.4 to 18.5 - 8.32 79.43 - -	low low low low low low low

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a

## Section 13. Disposal considerations

safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

## 14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class(es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.
Product RQ (lbs)	3687.4	Not applicable.	Not applicable.
RQ substances	(xylene)	Not applicable.	Not applicable.

### Additional information

**DOT** : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

**IMDG** : None identified.

**IATA** : None identified.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not applicable.

## Section 15. Regulatory information

### United States

United States inventory (TSCA 8b) : All components are active or exempted.

#### United States - TSCA 5(a)2 - Proposed significant new use rules:

pentane-2,4-dione

Listed

### SARA 302/304

SARA 304 RQ : Not applicable.

### Composition/information on ingredients

No products were found.

### SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 3  
CARCINOGENICITY - Category 2  
TOXIC TO REPRODUCTION - Category 2  
HNOC - Defatting irritant

### Composition/information on ingredients

Name	%	Classification
titanium dioxide	≥20 - ≤50	CARCINOGENICITY - Category 2
heptan-2-one	≥10 - ≤17	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
xylene	≥1.0 - ≤3.0	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1
pentan-2-one	≤1.2	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
toluene	<1.0	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant

## Section 15. Regulatory information


ethylbenzene	<1.0	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
propylidynetrimethanol	≤1.0	TOXIC TO REPRODUCTION - Category 2
4-methylpentan-2-one	<1.0	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant

### SARA 313

Supplier notification	Chemical name	CAS number	Concentration
	xylene	1330-20-7	1 - 5
	ethylbenzene	100-41-4	0.1 - 1
	4-methylpentan-2-one	108-10-1	0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### California Prop. 65

 **WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health : 2 \* Flammability : 3 Physical hazards : 0

(\*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

### National Fire Protection Association (U.S.A.)

Health : 2 Flammability : 3 Instability : 0

Date of previous issue : 1/7/2022

Organization that prepared the SDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient

## Section 16. Other information

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

N/A = Not available

SGG = Segregation Group

UN = United Nations

✔ Indicates information that has changed from previously issued version.

### Disclaimer

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*





## SAFETY DATA SHEET

### Aerodur SGL Aluminium Topcoat 000589 FSA17178 Aluminium

#### Section 1. Identification

**GHS product identifier** : Aerodur SGL Aluminium Topcoat 000589 FSA17178 Aluminium  
**Other means of identification** : 77226/000589 Aerodur Finish SGL Aluminium silver

**Relevant identified uses of the substance or mixture and uses advised against**  
: FOR INDUSTRIAL USE ONLY

**Supplier/Manufacturer** : Akzo Nobel Coatings, Inc.  
1 East Water Street  
Waukegan, IL 60085  
USA  
Tel. 1 847 623 4200  
Email: customer.  
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**Emergency telephone number** : CHEMTREC +1 (800) 424-9300 (Inside the US)  
CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

**Date of issue / Date of revision** : 23 October 2020

**Safety Data Sheet Version** : 5.07

**Date of printing** : 23 October 2020

Akzo Nobel Coatings Inc. encourages and expects you to read and understand this entire MSDS, as there is important information throughout the document. Further, Akzo Nobel Coatings Inc. expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information contained in this MSDS and any other information regarding hazards and safety; 2) Furnish this same information to each of its customers for the product; 3) Request its customers to notify their employees, customers, and other users of the product of this information; and 4) Notify its employees, agents, contractors, and others that the precautions identified for this product and any other products with which mixtures may be created are transferable and cumulative to the mixture.

#### Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 2  
CARCINOGENICITY - Category 2

#### GHS label elements

## Section 2. Hazards identification

Hazard pictograms :



Signal word : Danger

Hazard statements : Highly flammable liquid and vapor.  
Suspected of causing cancer.

### Precautionary statements

**Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Keep container tightly closed.

**Response** : IF exposed or concerned: Get medical attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

**Storage** : Store locked up. Store in a well-ventilated place. Keep cool.

**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

## Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
2-methoxy-1-methylethyl acetate	30 - 35	108-65-6
Aluminium powder (stabilized)	10 - 15	7429-90-5
Naphtha (petroleum), hydrotreated heavy	1 - 5	64742-48-9
Solvent naphtha (petroleum), light arom.	1 - 5	64742-95-6
butanone	1 - 5	78-93-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

## Section 4. First aid measures

- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
metal oxide/oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
2-methoxy-1-methylethyl acetate	<b>AIHA WEEL (United States, 10/2011).</b> TWA: 50 ppm 8 hours.
Aluminium powder (stabilized)	<b>NIOSH REL (United States, 10/2016).</b> TWA: 5 mg/m <sup>3</sup> 10 hours. Form: Respirable fraction TWA: 10 mg/m <sup>3</sup> 10 hours. Form: Total <b>ACGIH TLV (United States, 3/2016).</b> TWA: 1 mg/m <sup>3</sup> 8 hours. Form: Respirable

## Section 8. Exposure controls/personal protection

Naphtha (petroleum), hydrotreated heavy  
Solvent naphtha (petroleum), light arom.  
butanone

fraction  
**OSHA PEL (United States, 6/2016).**  
TWA: 5 mg/m<sup>3</sup>, (as Al) 8 hours. Form:  
Respirable fraction  
TWA: 15 mg/m<sup>3</sup>, (as Al) 8 hours. Form: Total  
dust  
None.  
None.  
**ACGIH TLV (United States, 3/2016).**  
STEL: 885 mg/m<sup>3</sup> 15 minutes.  
STEL: 300 ppm 15 minutes.  
TWA: 590 mg/m<sup>3</sup> 8 hours.  
TWA: 200 ppm 8 hours.  
**NIOSH REL (United States, 10/2016).**  
STEL: 885 mg/m<sup>3</sup> 15 minutes.  
STEL: 300 ppm 15 minutes.  
TWA: 590 mg/m<sup>3</sup> 10 hours.  
TWA: 200 ppm 10 hours.  
**OSHA PEL (United States, 6/2016).**  
TWA: 590 mg/m<sup>3</sup> 8 hours.  
TWA: 200 ppm 8 hours.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

### Skin protection

## Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	: Liquid.	
<b>Color</b>	: Not available.	
<b>Odor</b>	: Solvent.	
<b>Odor threshold</b>	: Not available.	
<b>pH</b>	: Not available.	
<b>Melting/freezing point</b>	: Not available.	
<b>Boiling point</b>	: 80°C (176°F)	
<b>boiling range</b>	: Not available.	
<b>Flash point</b>	: Closed cup: 22°C (71.6°F)	
<b>Evaporation rate</b>	: Not available.	
<b>Flammability (solid, gas)</b>	: Not available.	
<b>Upper/lower flammability or explosive limits</b>		
<b>Upper:</b>	: Not determined.	
<b>Lower:</b>	: Not determined.	
<b>Vapor pressure</b>	: Not available.	
<b>Vapor density</b>	: Not available.	
<b>Relative density</b>	: 1.155	
<b>Density</b>	: 9.64 lbs/gal	1.155 g/cm³
<b>Solubility</b>	: Not available.	
<b>Solubility in water</b>	: Not available.	
<b>Partition coefficient: n-octanol/water</b>	: Not available.	
<b>Auto-ignition temperature</b>	: Not available.	
<b>Decomposition temperature</b>	: Not available.	



## Section 9. Physical and chemical properties

<b>Viscosity</b>	: Kinematic (room temperature): 13.86 cm <sup>2</sup> /s (1386 cSt)			
<b>Weight Volatiles</b>	: 44.05% (w/w)			
<b>Volume Volatiles</b>	: 55.70 % (v/v)			
<b>Weight Solids</b>	: 55.95 % (w/w)			
<b>Volume Solids</b>	: 44.3 % (v/v)			
<b>Regulatory VOC</b>	: 4.2	lbs/gal	509	g/l minus water and exempt solvents
<b>VOC Actual</b>	: 4.2	lbs/gal	509	g/l

## Section 10. Stability and reactivity

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**Incompatible materials** : Reactive or incompatible with the following materials:  
oxidizing materials

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-methoxy-1-methylethyl acetate	LD50 Dermal	Rabbit	>5 g/kg	-
Naphtha (petroleum), hydrotreated heavy Solvent naphtha (petroleum), light arom. butanone	LD50 Oral	Rat	8532 mg/kg	-
	LD50 Oral	Rat	>6 g/kg	-
	LD50 Oral	Rat	8400 mg/kg	-
	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-

#### Irritation/Corrosion

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Solvent naphtha (petroleum), light arom. butanone	Eyes - Mild irritant	Rabbit	-	24 hours 100 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 14 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Solvent naphtha (petroleum), light arom.	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Name	Result
Solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No specific data.  
**Inhalation** : No specific data.

## Section 11. Toxicological information

**Skin contact** : No specific data.  
**Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

**General** : No known significant effects or critical hazards.  
**Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	43997.3 mg/kg

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
butanone	Acute EC50 >500000 µg/l Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 5091000 to 6440000 µg/l	Daphnia - Daphnia magna -	48 hours
	Fresh water	Larvae	
	Acute LC50 5600 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours

### Persistence and degradability

Not available.

### Bioaccumulative potential

## Section 12. Ecological information

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
2-methoxy-1-methylethyl acetate	1.2	-	low
Naphtha (petroleum), hydrotreated heavy	-	10 to 2500	high
Solvent naphtha (petroleum), light arom.	-	10 to 2500	high
butanone	0.3	-	low

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations






**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

**Special precautions for user** : Please Note: The information provided in section 14 is based on a bulk package shipment via ground transport in North America. All shippers are responsible for ensuring the proper transportation classification and package/container requirements are followed for the relevant mode of transport.

**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	II	II	II	II	II
Environmental hazards	No.	No.	No.	No.	No.

## Section 15. Regulatory information

### U.S. Federal regulations

**United States inventory (TSCA 8b):** All components are listed or exempted.

### SARA 311/312

**Classification** : Fire hazard  
Delayed (chronic) health hazard

### SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Aluminium powder (stabilized)	7429-90-5	10 - 15

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### California Prop. 65

Based on available information, no listed components are known to be present.

### International lists

#### National inventory

**Australia** : All components are listed or exempted.  
**Canada** : All components are listed or exempted.  
**China** : All components are listed or exempted.  
**Europe** : All components are listed or exempted.  
**Japan** : **Japan inventory (ENCS):** All components are listed or exempted.  
**Japan inventory (ISHL):** At least one component is not listed.

## Section 15. Regulatory information

<b>Malaysia</b>	: At least one component is not listed.
<b>New Zealand</b>	: All components are listed or exempted.
<b>Philippines</b>	: All components are listed or exempted.
<b>Republic of Korea</b>	: All components are listed or exempted.
<b>Taiwan</b>	: All components are listed or exempted.
<b>Turkey</b>	: At least one component is not listed.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

<b>Health</b>	*	2
<b>Flammability</b>		3
<b>Physical hazards</b>		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

### National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### History

<b>Date of issue/Date of revision</b>	: 23 October 2020		
<b>Version</b>	: 5.07		
<b>MSDS #</b>	: A36558	0014	00082BFAE0

## Section 16. Other information

### Key to abbreviations

: ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.





## SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No. 453/2010 - United Kingdom (UK)

XYLAN® 1270/F8470 CLEAR

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

**Product name** : XYLAN® 1270/F8470 CLEAR  
**Product code** : F8470  
**Product description** : Organic solvent based, coating designed to offer protection against corrosion caused by road salt, acid rain and other forms of environmental corrosion.  
**Product type** : Liquid.  
**Other means of identification** : Not available.

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

#### 1.3 Details of the supplier of the safety data sheet

Whitford Ltd., 11 Stuart Road, Manor Park, Runcorn, Cheshire WA7 1TH England

**e-mail address of person responsible for this SDS** : lrees@whitfordww.com

#### National contact

None determined

#### 1.4 Emergency telephone number

##### National advisory body/Poison Centre

**Telephone number** : National Poisons Information Service  
+44 121 507 4123

##### Supplier

**Telephone number** : [44] (0) 1928-571000 24 hours

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flam. Liq. 3, H226  
Skin Irrit. 2, H315  
Eye Irrit. 2, H319  
Skin Sens. 1, H317  
Carc. 2, H351  
Aquatic Chronic 2, H411

## SECTION 2: Hazards identification

### Classification according to Directive 1999/45/EC [DPD]

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

#### Hazard pictograms

:



#### Signal word

: Warning

#### Hazard statements

: Flammable liquid and vapour.  
Causes serious eye irritation.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Suspected of causing cancer.  
Toxic to aquatic life with long lasting effects.

### Precautionary statements

#### Prevention

: Obtain special instructions before use. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Avoid release to the environment.

#### Response

: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

#### Storage

: Keep cool.

#### Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

#### Hazardous ingredients

: reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq 700$ )  
naphthalene  
phthalic anhydride  
formaldehyde

#### Supplemental label elements

: Not applicable.

#### Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Not applicable.

### Special packaging requirements

#### Containers to be fitted with child-resistant fastenings

: Not applicable.

#### Tactile warning of danger

: Not applicable.

### 2.3 Other hazards

#### Other hazards which do not result in classification

: None known.

**SECTION 3: Composition/information on ingredients****Substance/mixture** : Mixture

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	EC: 500-033-5 CAS: 25068-38-6 Index: 603-074-00-8	>=35 - <50	Xi; R36/38  R43 N; R51/53	Skin Irrit. 2, H315  Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411	[1]
2-methoxy-1-methylethyl acetate	EC: 203-603-9 CAS: 108-65-6 Index: 607-195-00-7	>=10 - <15	R10	Flam. Liq. 3, H226	[2]
Solvent naphtha (petroleum), heavy arom.	EC: 265-198-5 CAS: 64742-94-5 Index: 649-424-00-3	<10	Xn; R65	Asp. Tox. 1, H304 Aquatic Chronic 4, H413	[1]
2-butoxyethanol	EC: 203-905-0 CAS: 111-76-2 Index: 603-014-00-0	>=7 - <10	Xn; R20/21/22  Xi; R36/38	Acute Tox. 4, H302  Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Eye Irrit. 2, H319	[1] [2]
4-hydroxy-4-methylpentan-2-one	EC: 204-626-7 CAS: 123-42-2 Index: 603-016-00-1	<10	Xi; R36		[1] [2]
1-methoxy-2-propanol	EC: 203-539-1 CAS: 107-98-2  Index: 603-064-00-3	<15	R10 R67	Flam. Liq. 3, H226 STOT SE 3, H336 (Narcotic effects)	[1] [2]
4-methylpentan-2-ol	EC: 203-551-7 CAS: 108-11-2	<25	R10 Xi; R37	Flam. Liq. 3, H226 STOT SE 3, H335 (Respiratory tract irritation)	[1] [2]
propan-1-ol	Index: 603-008-00-8 EC: 200-746-9 CAS: 71-23-8 Index: 603-003-00-0	>=1 - <5	F; R11  Xi; R41 R67	Flam. Liq. 2, H225  Eye Dam. 1, H318 STOT SE 3, H336 (Narcotic effects)	[1] [2]
xylene	EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	>=1 - <5	R10  Xn; R20/21 Xi; R38	Flam. Liq. 3, H226  Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Acute Tox. 4, H302	[1] [2]
naphthalene	EC: 202-049-5 CAS: 91-20-3 Index: 601-052-00-2	>=1 - <2.5	Carc. Cat. 3; R40  Xn; R22 N; R50/53	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Acute Tox. 4, H302	[1] [2]
phthalic anhydride	EC: 201-607-5 CAS: 85-44-9 Index: 607-009-00-4	>=0.1 - <1	Xn; R22  Xi; R41, R37/38 R42/43	Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334	[1] [2]

**SECTION 3: Composition/information on ingredients**

				Skin Sens. 1, H317 STOT SE 3, H335 (Respiratory tract irritation) Aquatic Acute 1, H400 Aquatic Chronic 1, H410 <b>See Section 16 for the full text of the R-phrases declared above.</b> <b>See Section 16 for the full text of the H-statements declared above.</b>	
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There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

[5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

**SECTION 4: First aid measures****4.1 Description of first aid measures****Eye contact**

: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

**Inhalation**

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Skin contact**

: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**

: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Protection of first-aiders**

: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

**4.2 Most important symptoms and effects, both acute and delayed**

## SECTION 4: First aid measures

### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : Irritating to mouth, throat and stomach.

### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness
- Ingestion** : No specific data.

### 4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
halogenated compounds

### 5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### 6.2 Environmental precautions

- : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### 6.3 Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

### 6.4 Reference to other sections

- : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.



## SECTION 7: Handling and storage

### Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### 7.2 Conditions for safe storage, including any incompatibilities

Store between the following temperatures: 5 to 30°C (41 to 86°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

### 7.3 Specific end use(s)

#### Recommendations

: Organic solvent based, coating designed to offer protection against corrosion caused by road salt, acid rain and other forms of environmental corrosion.

#### Industrial sector specific solutions

: Not available.

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
2-methoxy-1-methylethyl acetate	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b> STEL: 548 mg/m <sup>3</sup> 15 minutes. TWA: 50 ppm 8 hours. TWA: 274 mg/m <sup>3</sup> 8 hours. STEL: 100 ppm 15 minutes.
2-butoxyethanol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b> STEL: 50 ppm 15 minutes. TWA: 25 ppm 8 hours.
4-hydroxy-4-methylpentan-2-one	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> STEL: 362 mg/m <sup>3</sup> 15 minutes. STEL: 75 ppm 15 minutes. TWA: 241 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours.
1-methoxy-2-propanol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b> STEL: 560 mg/m <sup>3</sup> 15 minutes. STEL: 150 ppm 15 minutes. TWA: 375 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
4-methylpentan-2-ol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b> STEL: 170 mg/m <sup>3</sup> 15 minutes. STEL: 40 ppm 15 minutes. TWA: 106 mg/m <sup>3</sup> 8 hours. TWA: 25 ppm 8 hours.
propan-1-ol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed</b>

## SECTION 8: Exposure controls/personal protection

<p>xylylene</p> <p>naphthalene</p> <p>phthalic anhydride</p>	<p>through skin.</p> <p>STEL: 625 mg/m<sup>3</sup> 15 minutes.</p> <p>STEL: 250 ppm 15 minutes.</p> <p>TWA: 500 mg/m<sup>3</sup> 8 hours.</p> <p>TWA: 200 ppm 8 hours.</p> <p><b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b></p> <p>STEL: 441 mg/m<sup>3</sup> 15 minutes.</p> <p>TWA: 50 ppm 8 hours.</p> <p>TWA: 220 mg/m<sup>3</sup> 8 hours.</p> <p>STEL: 100 ppm 15 minutes.</p> <p><b>EU OEL (Europe, 12/2009). Notes: list of indicative occupational exposure limit values</b></p> <p>TWA: 10 ppm 8 hours.</p> <p>TWA: 50 mg/m<sup>3</sup> 8 hours.</p> <p><b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Skin sensitiser.</b></p> <p>STEL: 12 mg/m<sup>3</sup> 15 minutes.</p> <p>TWA: 4 mg/m<sup>3</sup> 8 hours.</p>
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**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### DNELs/DMELs

No DNELs/DMELs available.

### PNECs

No PNECs available

## 8.2 Exposure controls

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.



## SECTION 8: Exposure controls/personal protection

### Skin protection

#### Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

#### Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

#### Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

#### Respiratory protection

: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

#### Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state	: Liquid. [Viscous liquid.]
Colour	: Opaque.
Odour	: Sweetish.
Odour threshold	: Not available.
pH	: Not available.
Melting point/freezing point	: <-20°C
Initial boiling point and boiling range	: >140°C
Flash point	: Closed cup: >42°C [Setaflash.]
Evaporation rate	: <1 (butyl acetate = 1)
Flammability (solid, gas)	: Not available.
Burning time	: Not applicable.
Burning rate	: Not applicable.
Upper/lower flammability or explosive limits	: Lower: 1% Upper: 10%
Vapour pressure	: Not available.
Vapour density	: Not available.
Relative density	: 1.02
Solubility(ies)	: Not available.
Solubility in water	: Not available.

**SECTION 9: Physical and chemical properties**

**Partition coefficient: n-octanol/ water** : Not available.

**Auto-ignition temperature** : >272°C

**Decomposition temperature** : >260°C

**Viscosity** : Not available.

**Explosive properties** : Not available.

**Oxidising properties** : Not available.

**9.2 Other information**

No additional information.

**SECTION 10: Stability and reactivity**

**10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**10.2 Chemical stability** : The product is stable.

**10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**10.4 Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**10.5 Incompatible materials** : Reactive or incompatible with the following materials:  
oxidizing materials

**10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
2-methoxy-1-methylethyl acetate	LD50 Dermal	Rabbit	>5 g/kg	-
2-butoxyethanol	LD50 Oral	Rat	8532 mg/kg	-
4-hydroxy-4-methylpentan-2-one	LD50 Oral	Rat	917 mg/kg	-
	LD50 Dermal	Rabbit	13500 mg/kg	-
1-methoxy-2-propanol	LD50 Oral	Rat	2520 mg/kg	-
	LD50 Dermal	Rabbit	13 g/kg	-
	LD50 Oral	Rat	6600 mg/kg	-
4-methylpentan-2-ol	LD50 Oral	Rat	2590 mg/kg	-
propan-1-ol	LD50 Dermal	Rabbit	5040 mg/kg	-
	LD50 Oral	Rat	2200 mg/kg	-
xylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
naphthalene	LD50 Dermal	Rabbit	>20 g/kg	-
	LD50 Oral	Rat	490 mg/kg	-
phthalic anhydride	LD50 Oral	Rat	1530 mg/kg	-

**Conclusion/Summary** : Not available.

**SECTION 11: Toxicological information****Acute toxicity estimates**

Route	ATE value
Oral	3802.5 mg/kg
Dermal	4707.7 mg/kg
Inhalation (gases)	115580.1 ppm
Inhalation (vapours)	57.77 mg/l

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq 700$ )	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 microliters	-
	Skin - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
Solvent naphtha (petroleum), heavy arom. 2-butoxyethanol	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
4-hydroxy-4-methylpentan-2-one	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 100 microliters	-
1-methoxy-2-propanol	Skin - Mild irritant	Rabbit	-	500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
propan-1-ol	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Mild irritant	Human	-	47 hours 100 Percent	-
	Skin - Mild irritant	Human	-	24 hours 100 Percent	-
xylene	Skin - Mild irritant	Rabbit	-	500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	87 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
naphthalene	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	100 Percent	-
phthalic anhydride	Skin - Mild irritant	Rabbit	-	495 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 0.05 Milliliters	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 50 milligrams	-

**SECTION 11: Toxicological information****Conclusion/Summary** : Not available.**Sensitisation****Conclusion/Summary** : Not available.**Mutagenicity****Conclusion/Summary** : Not available.**Carcinogenicity****Conclusion/Summary** : Not available.**Reproductive toxicity****Conclusion/Summary** : Not available.**Teratogenicity****Conclusion/Summary** : Not available.**Specific target organ toxicity (single exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
1-methoxy-2-propanol	Category 3	Not applicable.	Narcotic effects
4-methylpentan-2-ol	Category 3	Not applicable.	Respiratory tract irritation
propan-1-ol	Category 3	Not applicable.	Narcotic effects
phthalic anhydride	Category 3	Not applicable.	Respiratory tract irritation

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Product/ingredient name	Result
Solvent naphtha (petroleum), heavy arom.	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Not available.**Potential acute health effects****Eye contact** : Causes serious eye irritation.**Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.**Skin contact** : Causes skin irritation. May cause an allergic skin reaction.**Ingestion** : Irritating to mouth, throat and stomach.**Symptoms related to the physical, chemical and toxicological characteristics****Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness**Inhalation** : No specific data.**Skin contact** : Adverse symptoms may include the following:  
irritation  
redness**Ingestion** : No specific data.**Delayed and immediate effects and also chronic effects from short and long term exposure**

**SECTION 11: Toxicological information****Short term exposure****Potential immediate effects** : Not available.**Potential delayed effects** : Not available.**Long term exposure****Potential immediate effects** : Not available.**Potential delayed effects** : Not available.**Potential chronic health effects**

Not available.

**Conclusion/Summary** : Not available.**General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.**Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.**Mutagenicity** : No known significant effects or critical hazards.**Teratogenicity** : No known significant effects or critical hazards.**Developmental effects** : No known significant effects or critical hazards.**Fertility effects** : No known significant effects or critical hazards.**Other information** : Not available.**SECTION 12: Ecological information****12.1 Toxicity**

Product/ingredient name	Result	Species	Exposure
2-butoxyethanol	Acute EC50 >1000 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 800000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 1250000 µg/l Marine water	Fish - Menidia beryllina	96 hours
4-hydroxy-4-methylpentan-2-one	Acute LC50 420000 µg/l Marine water	Fish - Menidia beryllina	96 hours
propan-1-ol	Acute EC50 4480000 µg/l Fresh water	Algae - Selenastrum sp.	96 hours
	Acute LC50 1000000 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 2950000 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 3800000 µg/l Marine water	Fish - Alburnus alburnus	96 hours
xylene	Acute LC50 8.5 ppm Marine water	Crustaceans - Palaemonetes pugio - Adult	48 hours
	Acute LC50 20870 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
naphthalene	Acute EC50 1600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
	Chronic NOEC 0.67 ppm Fresh water	Fish - Oncorhynchus kisutch	40 days
phthalic anhydride	Acute EC50 147 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours

**Conclusion/Summary** : Not available.**12.2 Persistence and degradability****Conclusion/Summary** : Not available.

**SECTION 12: Ecological information****12.3 Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	2.64 to 3.78	31	low
2-methoxy-1-methylethyl acetate	0.56	-	low
Solvent naphtha (petroleum), heavy arom.	2.8 to 6.5	99 to 5780	high
2-butoxyethanol	0.83	-	low
4-hydroxy-4-methylpentan-2-one	-0.14 to 1.03	-	low
1-methoxy-2-propanol	<1	-	low
4-methylpentan-2-ol	1.43	-	low
propan-1-ol	0.25	-	low
xylene	3.12	8.1 to 25.9	low
naphthalene	3.3	36.5 to 168	low
phthalic anhydride	1.6	3.4	low

**12.4 Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

**12.5 Results of PBT and vPvB assessment**

**PBT** : Not applicable.

**vPvB** : Not applicable.

**12.6 Other adverse effects** : No known significant effects or critical hazards.

**SECTION 13: Disposal considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**13.1 Waste treatment methods****Product**

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

**Hazardous waste** : Yes.

**European waste catalogue (EWC)**

Waste code	Waste designation
08 01 11*	waste paint and varnish containing organic solvents or other dangerous substances

**Packaging**





**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

## SECTION 13: Disposal considerations

Type of packaging	European waste catalogue (EWC)	
Plastic or non-metallic drum	15 01 10*	packaging containing residues of or contaminated by dangerous substances

**Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
<b>14.1 UN Number</b>	UN1139	UN1139	UN1139	UN1139
<b>14.2 UN proper shipping name</b>	Coating solution	COATING SOLUTION	COATING SOLUTION. Marine pollutant (naphthalene)	Coating solution
<b>14.3 Transport hazard class(es)</b>	3 	3 	3 	3 
<b>14.4 Packing group</b>	III	III	III	III
<b>14.5 Environmental hazards</b>	Yes.	Yes.	Yes.	No.
<b>Additional information</b>	<p>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><b><u>Hazard identification number</u></b> 30</p> <p><b><u>Limited quantity</u></b> 5 L</p> <p><b><u>Special provisions</u></b> 640E</p> <p><b><u>Tunnel code</u></b> (D/E)</p>	<p>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><b><u>Special provisions</u></b> 640E</p>	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><b><u>Emergency schedules (EmS)</u></b> F-E, _S-E_</p> <p><b><u>Special provisions</u></b> 955</p>	<p>The environmentally hazardous substance mark may appear if required by other transportation regulations.</p> <p><b><u>Passenger and Cargo Aircraft</u></b> Quantity limitation: 60 L Packaging instructions: 355</p> <p><b><u>Cargo Aircraft Only</u></b> Quantity limitation: 220 L Packaging instructions: 366</p> <p><b><u>Limited Quantities - Passenger Aircraft</u></b> Quantity limitation: 10 L Packaging instructions: Y344</p> <p><b><u>Special provisions</u></b></p>



XYLAN® 1270/F8470 CLEAR

## SECTION 14: Transport information

				A3
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**14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## SECTION 15: Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**EU Regulation (EC) No. 1907/2006 (REACH)**

**Annex XIV - List of substances subject to authorisation**

**Annex XIV**

None of the components are listed.

**Substances of very high concern**

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

**Other EU regulations**

**Europe inventory** : All components are listed or exempted.

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
naphthalene	Carc. 2, H351	-	-	-

**Seveso II Directive**

This product is controlled under the Seveso II Directive.

**Named substances**

Name
formaldehyde Concentration >= 90%

**Danger criteria**

Category
P5c: Flammable liquids 2 and 3 not falling under P5a or P5b E2: Hazardous to the aquatic environment - Chronic 2 C6: Flammable (R10) C9ii: Toxic for the environment

**Chemical Weapons Convention List Schedule III Chemicals** : Not listed

**15.2 Chemical Safety Assessment** : This product contains substances for which Chemical Safety Assessments are still required.



## SECTION 16: Other information

Indicates information that has changed from previously issued version.

### Abbreviations and acronyms

: ATE = Acute Toxicity Estimate  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 DMEL = Derived Minimal Effect Level  
 DNEL = Derived No Effect Level  
 EUH statement = CLP-specific Hazard statement  
 PBT = Persistent, Bioaccumulative and Toxic  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number  
 vPvB = Very Persistent and Very Bioaccumulative

### Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 3, H226	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Carc. 2, H351	Calculation method
Aquatic Chronic 2, H411	Calculation method

### Full text of abbreviated H statements

: H225 Highly flammable liquid and vapour.  
 H226 Flammable liquid and vapour.  
 H302 Harmful if swallowed.  
 H304 May be fatal if swallowed and enters airways.  
 H312 Harmful in contact with skin.  
 H312 Harmful in contact with skin.  
 (dermal)  
 H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H318 Causes serious eye damage.  
 H319 Causes serious eye irritation.  
 H332 Harmful if inhaled.  
 H332 Harmful if inhaled.  
 (inhalation)  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H335 May cause respiratory irritation. (Respiratory tract irritation)  
 (Respiratory tract irritation)  
 H336 May cause drowsiness or dizziness. (Narcotic effects)  
 (Narcotic effects)  
 H351 Suspected of causing cancer.  
 H400 Very toxic to aquatic life.  
 H410 Very toxic to aquatic life with long lasting effects.  
 H411 Toxic to aquatic life with long lasting effects.  
 H413 May cause long lasting harmful effects to aquatic life.

### Full text of classifications [CLP/GHS]

: Acute Tox. 4, H302 ACUTE TOXICITY (oral) - Category 4  
 Acute Tox. 4, H312 ACUTE TOXICITY (dermal) - Category 4  
 Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4  
 Aquatic Acute 1, H400 ACUTE AQUATIC HAZARD - Category 1  
 Aquatic Chronic 1, H410 LONG-TERM AQUATIC HAZARD - Category 1  
 Aquatic Chronic 2, H411 LONG-TERM AQUATIC HAZARD - Category 2  
 Aquatic Chronic 4, H413 LONG-TERM AQUATIC HAZARD - Category 4  
 Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1  
 Carc. 2, H351 CARCINOGENICITY - Category 2  
 Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2

## SECTION 16: Other information

	Flam. Liq. 2, H225	FLAMMABLE LIQUIDS - Category 2
	Flam. Liq. 3, H226	FLAMMABLE LIQUIDS - Category 3
	Resp. Sens. 1, H334	RESPIRATORY SENSITIZATION - Category 1
	Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
	Skin Sens. 1, H317	SKIN SENSITIZATION - Category 1
	STOT SE 3, H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
	(Respiratory tract irritation)	
	STOT SE 3, H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
	(Narcotic effects)	

### Full text of abbreviated R phrases

: R11- Highly flammable.  
R10- Flammable.  
R40- Limited evidence of a carcinogenic effect.  
R22- Harmful if swallowed.  
R20/21- Harmful by inhalation and in contact with skin.  
R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.  
R65- Harmful: may cause lung damage if swallowed.  
R41- Risk of serious damage to eyes.  
R36- Irritating to eyes.  
R37- Irritating to respiratory system.  
R38- Irritating to skin.  
R36/38- Irritating to eyes and skin.  
R37/38- Irritating to respiratory system and skin.  
R43- May cause sensitisation by skin contact.  
R42/43- May cause sensitisation by inhalation and skin contact.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### Full text of classifications [DSD/DPD]

: F - Highly flammable  
Carc. Cat. 3 - Carcinogen category 3  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment

### Date of printing

: 1/26/2015.

### Date of issue/ Date of revision

: 1/26/2015.

### Date of previous issue

: 7/8/2013.

### Version

: 1.01

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# Section 8

## Map(s)

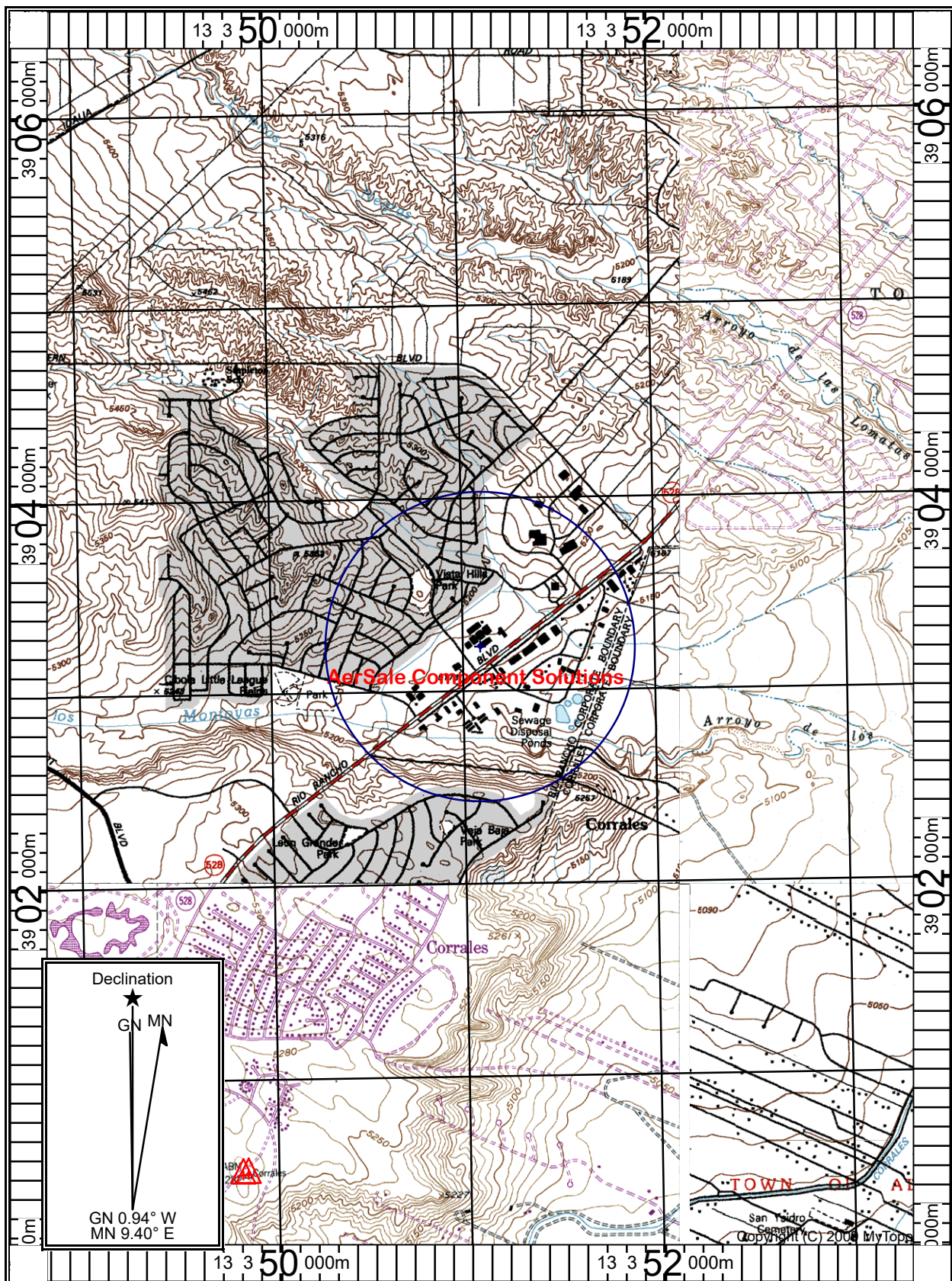
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**A map** such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

The UTM or Longitudinal coordinate system on both axes	An indicator showing which direction is north
A minimum radius around the plant of 0.8km (0.5 miles)	Access and haul roads
Topographic features of the area	Facility property boundaries
The name of the map	The area which will be restricted to public access
A graphical scale	

---

A map is attached on the following page.



Map Name: LOMA MACHETE (NM Scale: 1 inch = 2,500 ft. Horizontal Datum: WGS84  
 Print Date: 06/24/24 Map Center: 13 0351089 E 3903229 N



# Section 9

## Proof of Public Notice

(for NSR applications submitting under 20.2.72 or 20.2.74 NMAC)

(This proof is required by: 20.2.72.203.A.14 NMAC "Documentary Proof of applicant's public notice")

---

☒ **I have read the AQB "Guidelines for Public Notification for Air Quality Permit Applications"**

This document provides detailed instructions about public notice requirements for various permitting actions. It also provides public notice examples and certification forms. Material mistakes in the public notice will require a re-notice before issuance of the permit.

---

Unless otherwise allowed elsewhere in this document, the following items document proof of the applicant's Public Notification. Please include this page in your proof of public notice submittal with checkmarks indicating which documents are being submitted with the application.

**New Permit** and **Significant Permit Revision** public notices must include all items in this list.

**Technical Revision** public notices require only items 1, 5, 9, and 10.

Per the Guidelines for Public Notification document mentioned above, include:

1. ☒ A copy of the certified letter receipts with post marks (20.2.72.203.B NMAC)
  2. ☒ A list of the places where the public notice has been posted in at least four publicly accessible and conspicuous places, including the proposed or existing facility entrance. (e.g: post office, library, grocery, etc.)
  3. ☒ A copy of the property tax record (20.2.72.203.B NMAC).
  4. ☒ A sample of the letters sent to the owners of record.
  5. ☒ A sample of the letters sent to counties, municipalities, and Indian tribes.
  6. ☒ A sample of the public notice posted and a verification of the local postings.
  7. ☒ A table of the noticed citizens, counties, municipalities and tribes and to whom the notices were sent in each group.
  8. ☒ A copy of the public service announcement (PSA) sent to a local radio station and documentary proof of submittal.
  9. ☒ A copy of the classified or legal ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
  10. ☒ A copy of the display ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
  11. ☒ A map with a graphic scale showing the facility boundary and the surrounding area in which owners of record were notified by mail. This is necessary for verification that the correct facility boundary was used in determining distance for notifying land owners of record.
-

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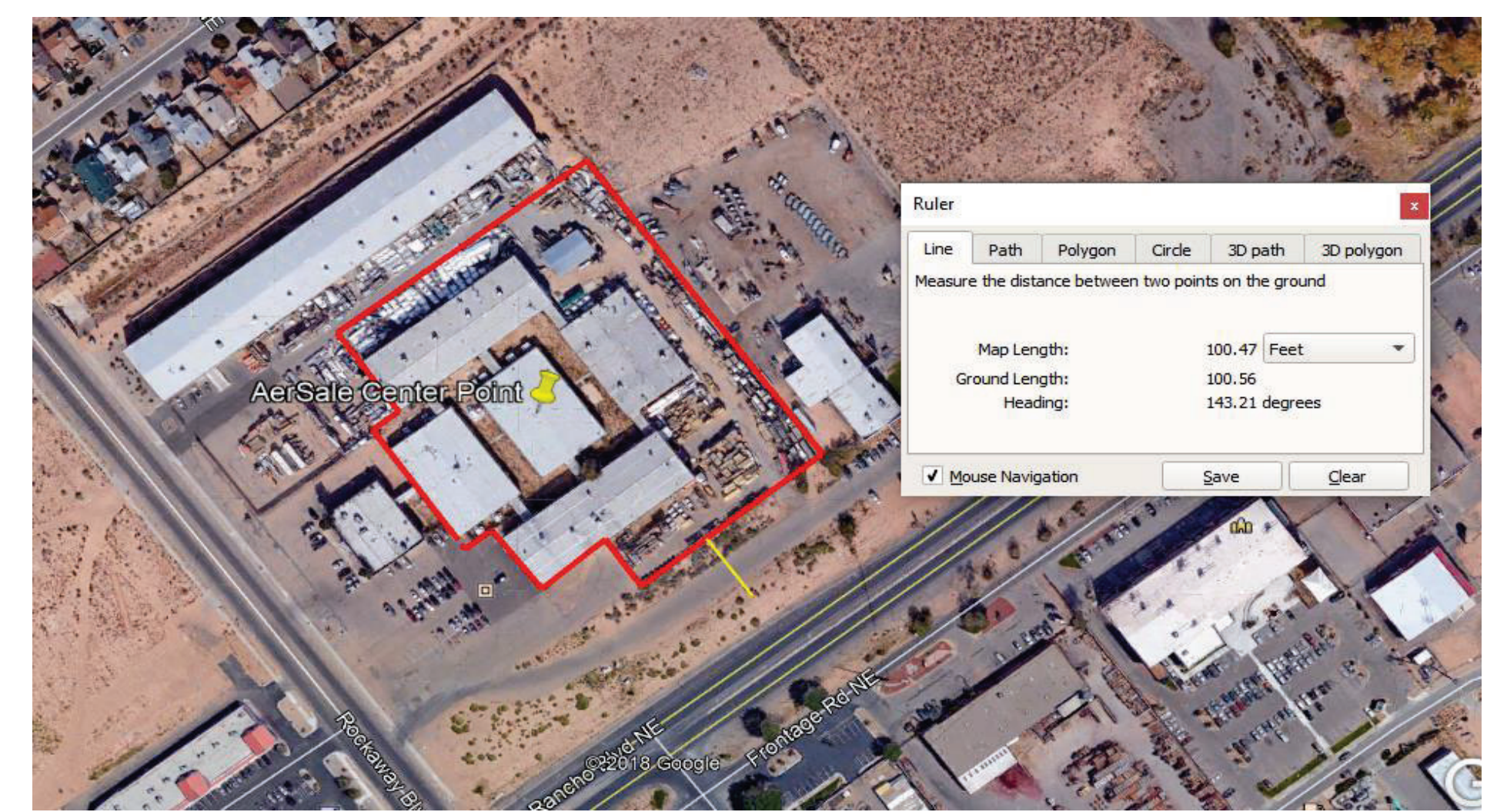
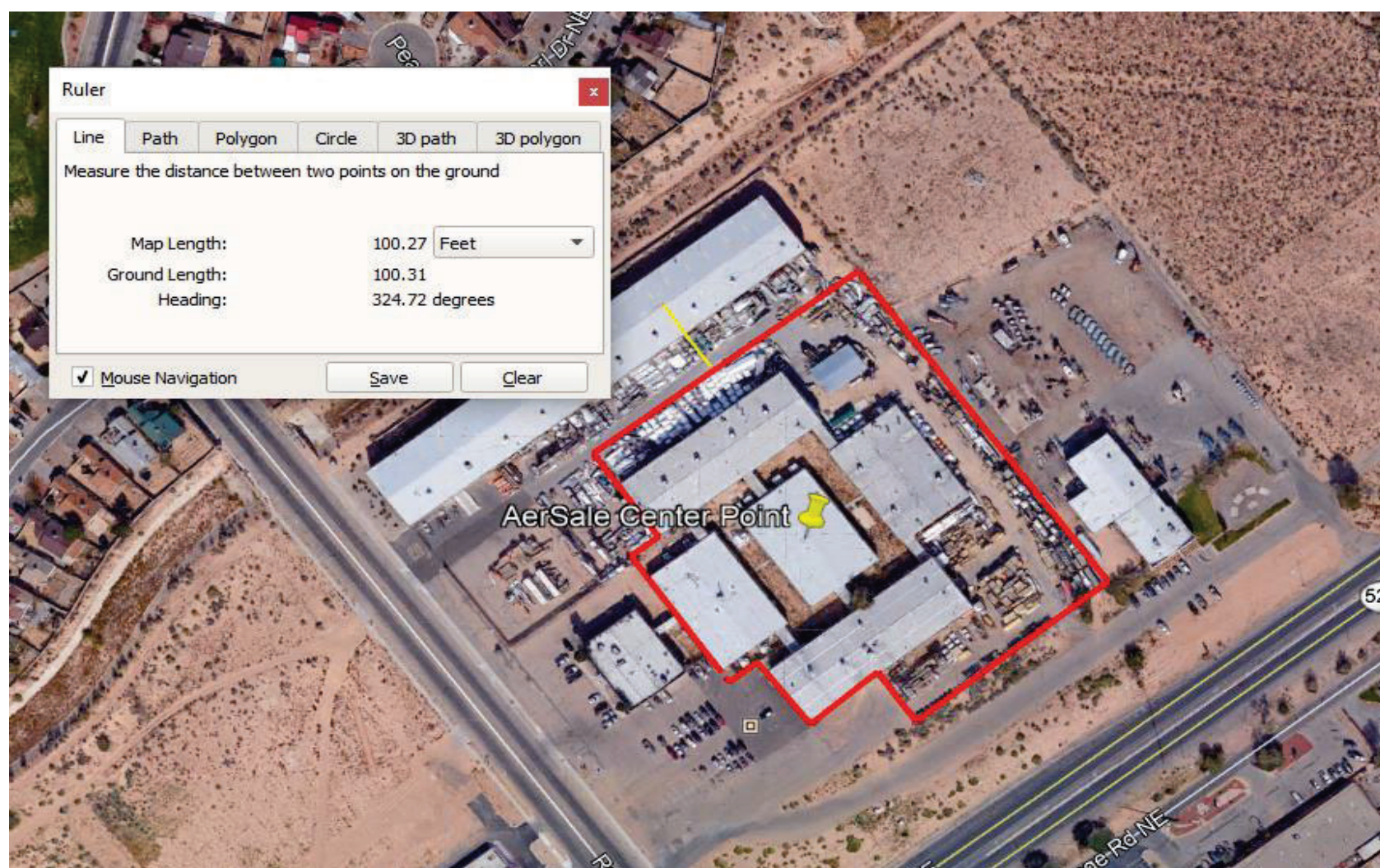
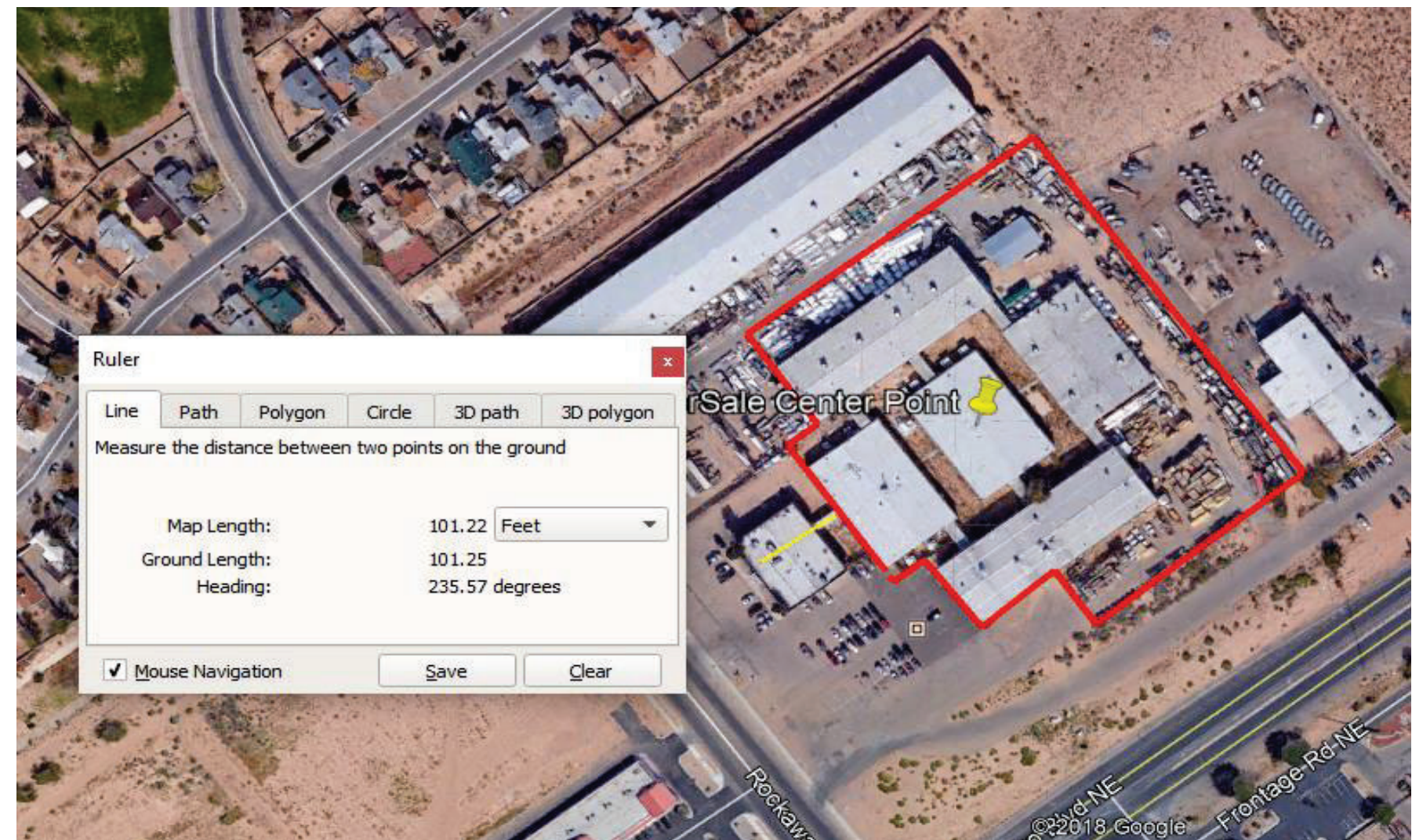
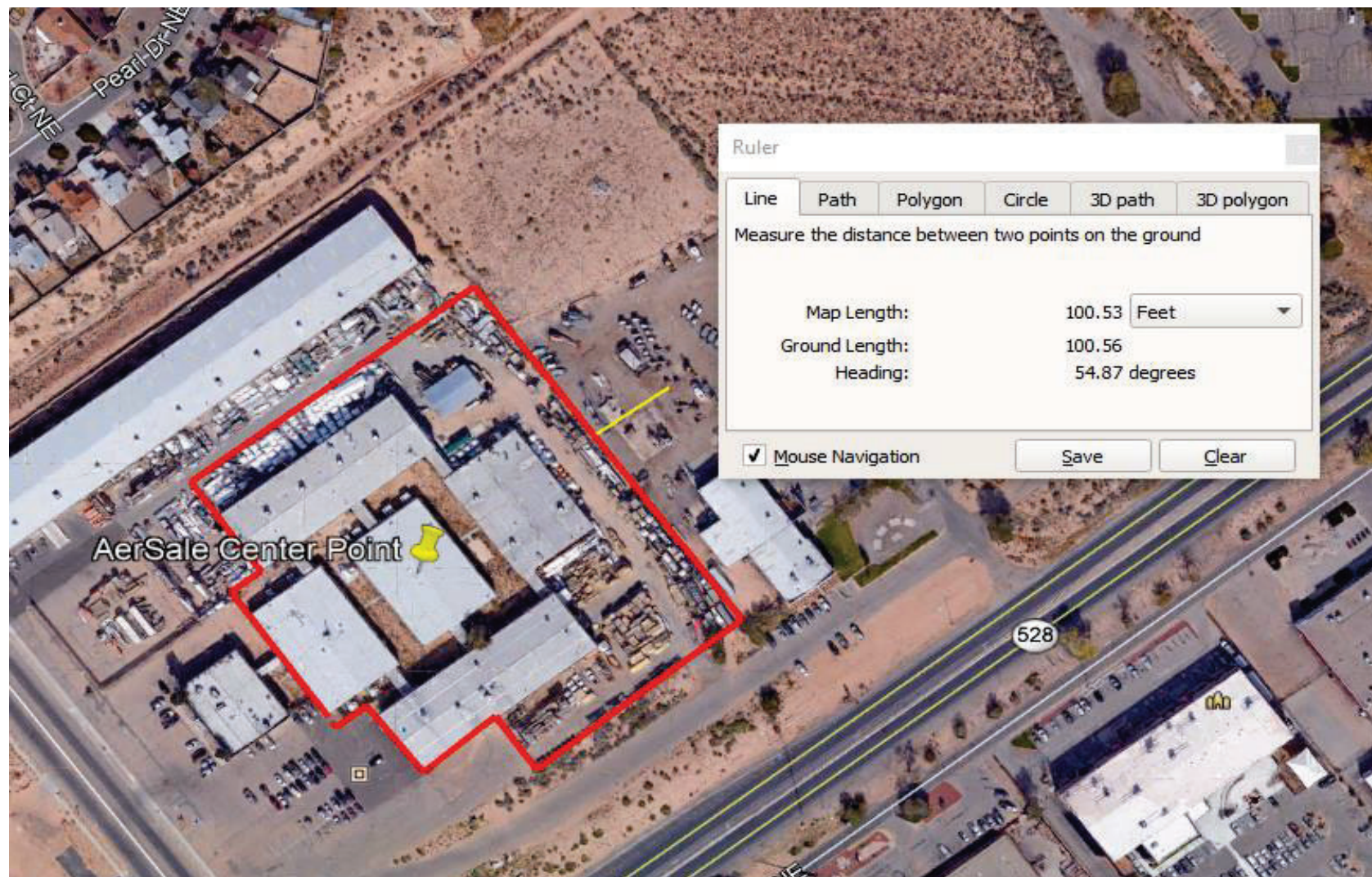


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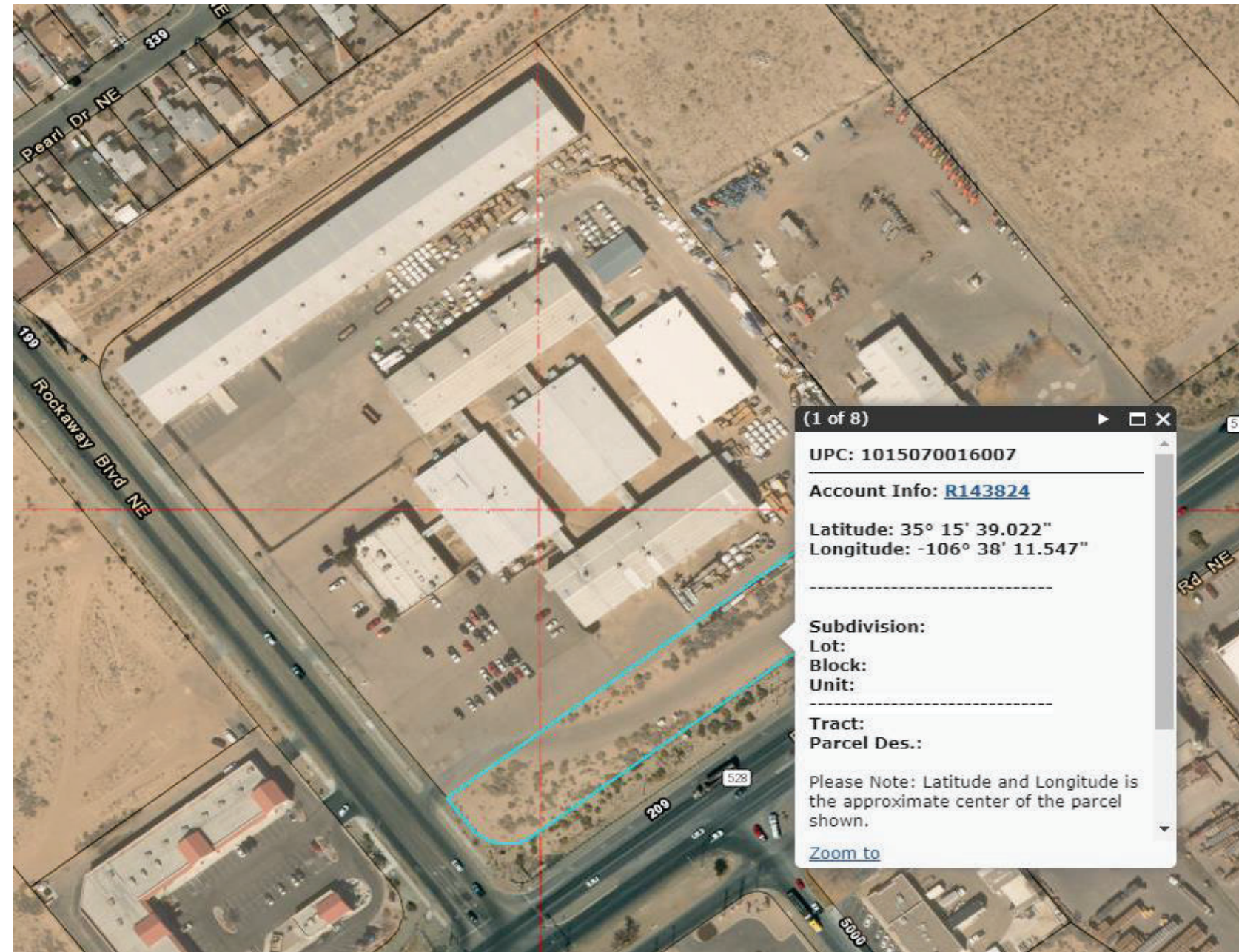
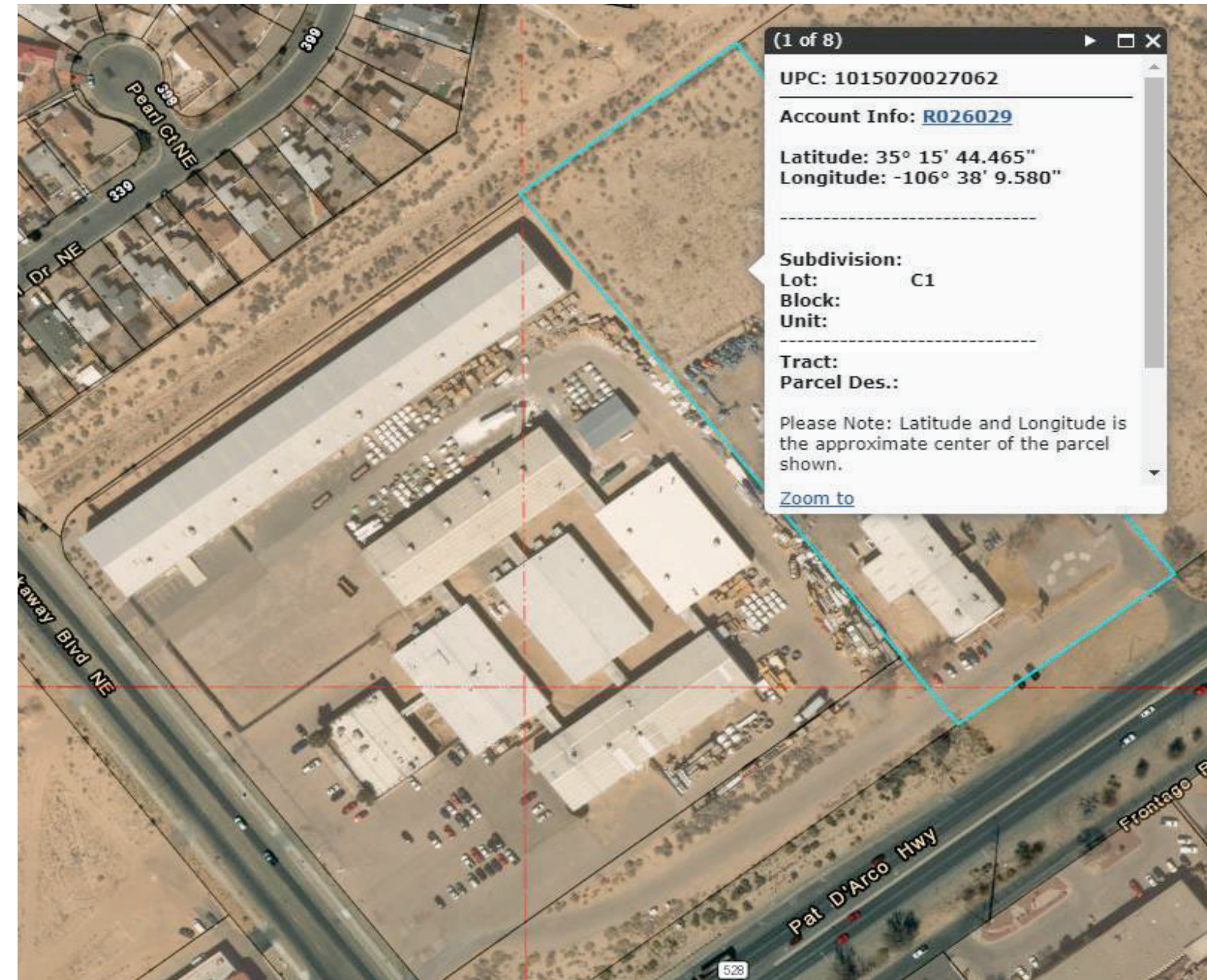
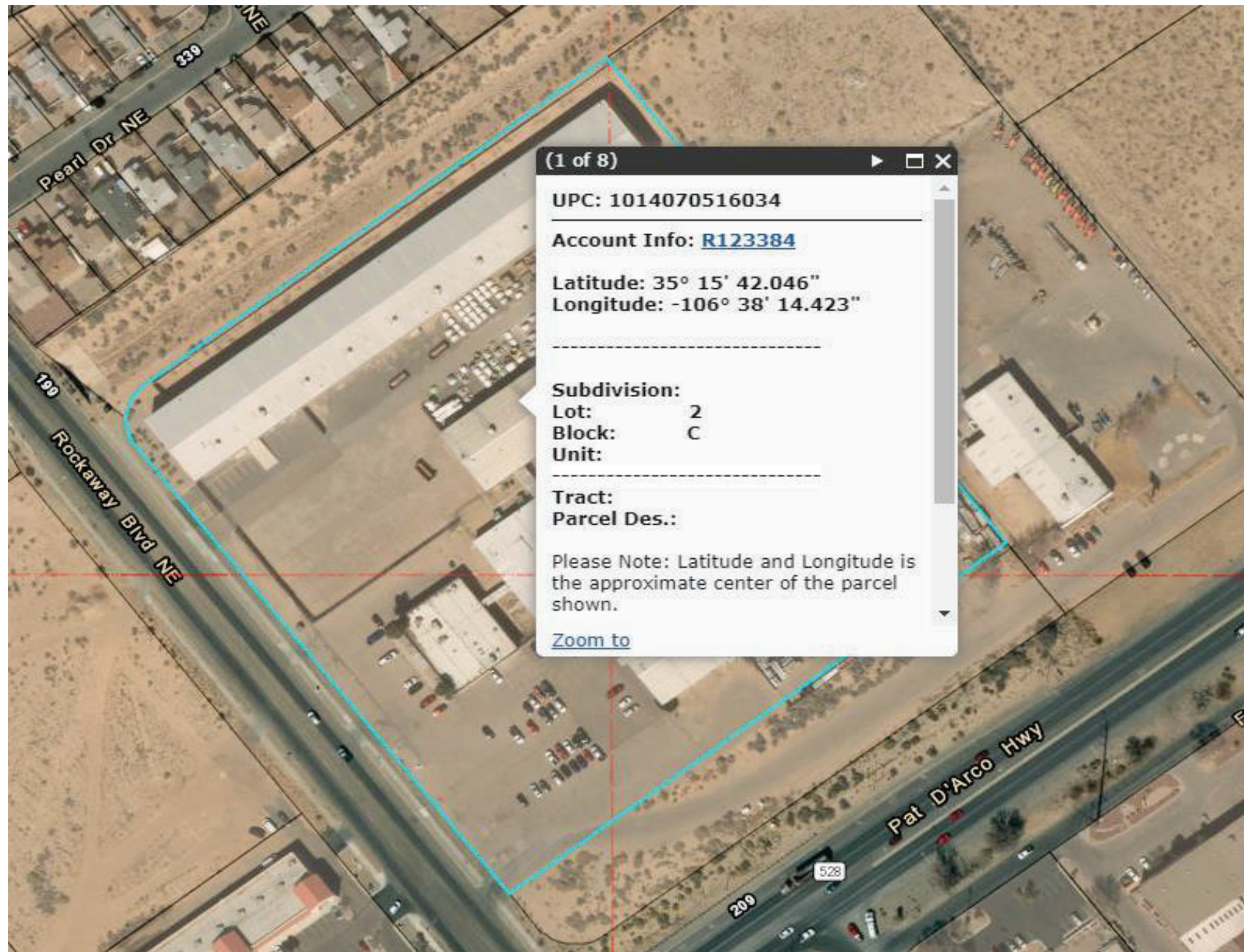
PS Form 3800, July 2014

See Reverse for Instructions

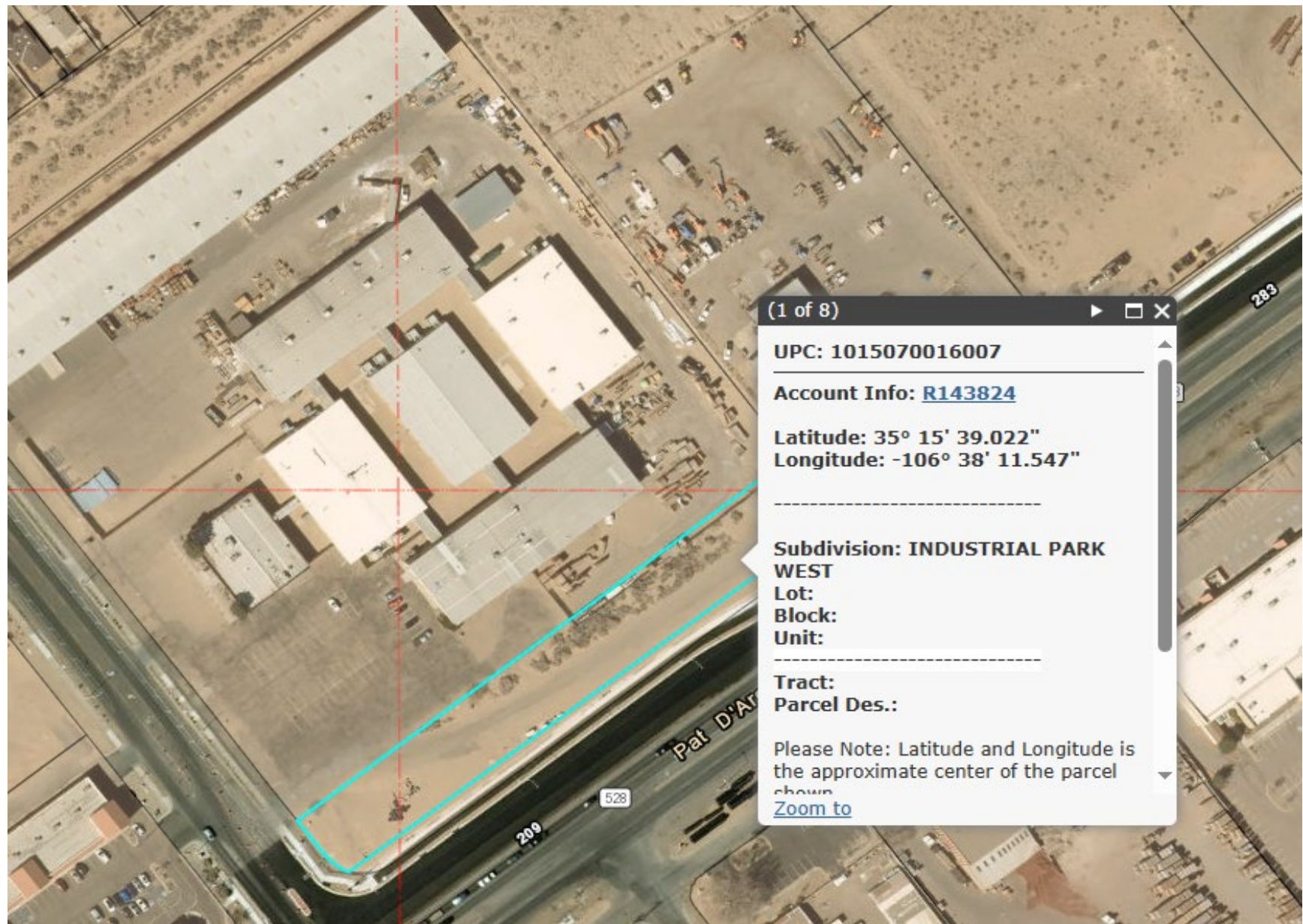
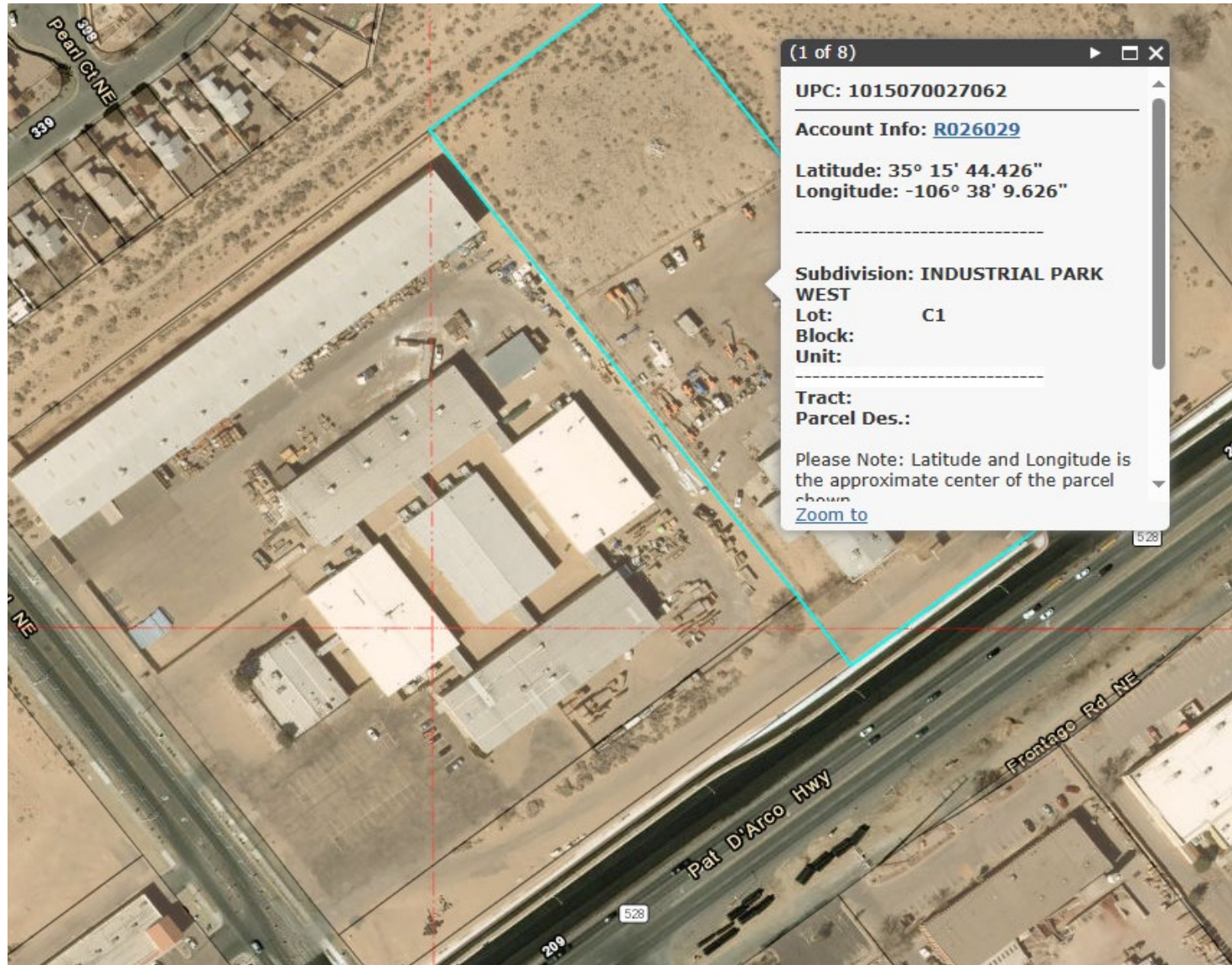
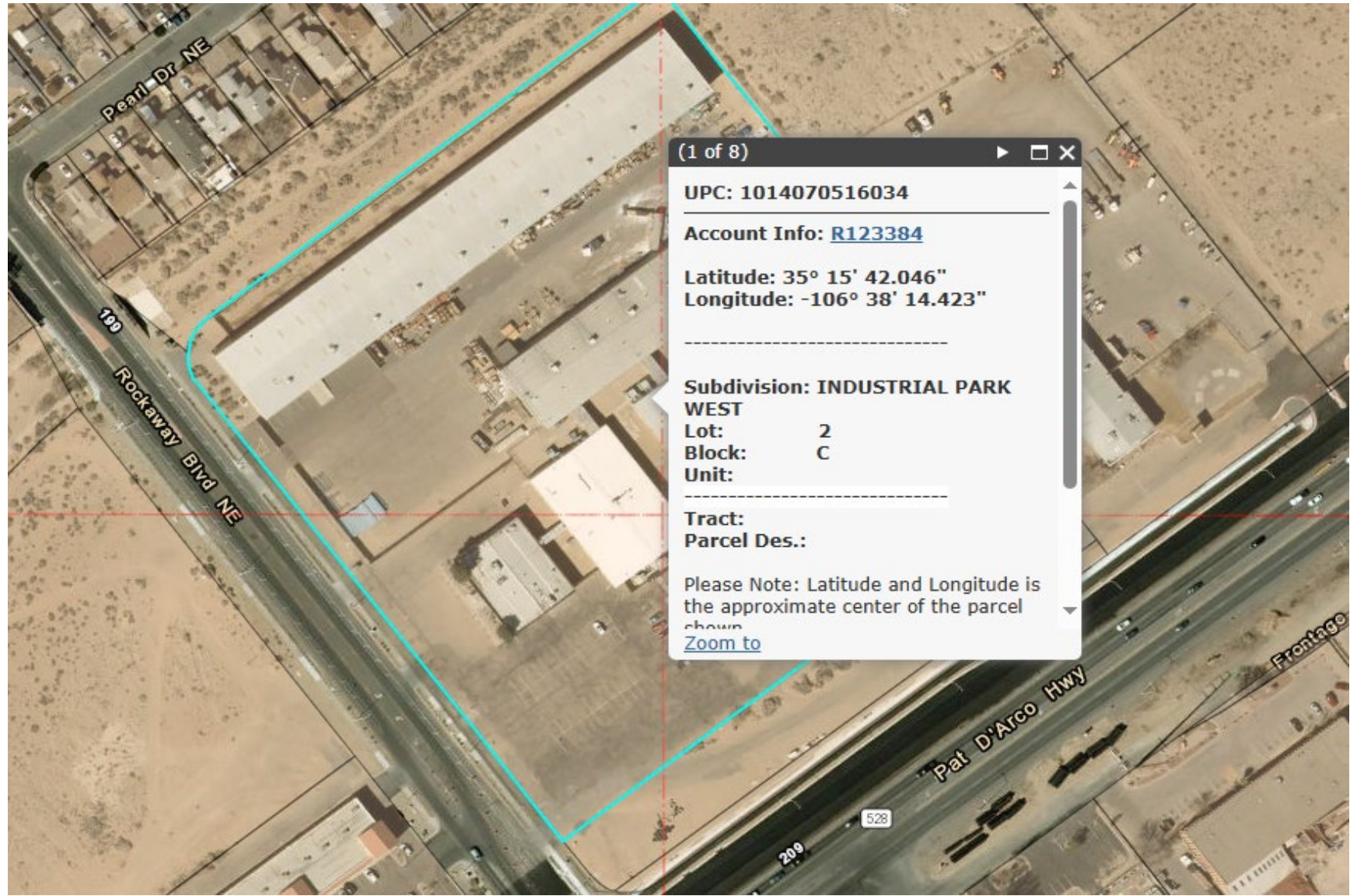















Account: R123384

Location		Owner Information		Assessment History					
Parcel Number 1-014-070-516-034		Owner Name ABRUVEST LLC		Actual Value (2024) \$9,808,518					
Tax Area 510CSH_NR - 510CSH_NR		Owner Address 820 S MONACO PKWY # 102		Primary Taxable \$3,269,506					
Situs Address 4901 ROCKAWAY BLVD		DENVER, CO 80224-3703		Tax Area: 510CSH_NR Mill Levy: 41.640					
Legal Summary Legal: S: 16 T: 12N R: 3E S: 17 T: 12N R: 3E S: 20 T: 12N R: 3E S: 21 T: 12N R: 3E Subd: INDUSTRIAL PARK WEST Block: C Lot: 2		UNITED STATES OF AMERICA		Type	Actual	Assessed	Acres	SQFT	Units
				Non-Residential Land	\$2,095,236	\$698,412	10.000	435600.000	1.000
				Non-Residential Improvement	\$7,713,282	\$2,571,094		143738.000	
Transfers									
Sale Date		Doc Description							
12/13/2022		SPECIAL WARRANTY DEED							
		WARRANTY DEED							
		WARRANTY DEED							
		AGREEMENT							
		WARRANTY DEED							
		MISCELLANEOUS							
		MISCELLANEOUS							
		MISCELLANEOUS							
		PLAT							
Images									
Tax Year		Taxes							
*2024		\$136,142.24							
2023		\$94,021.76							
* Estimated									
			Focusing On: 4901 ROCKAWAY BLVD R/O RANCHO 87124						

Account: R143824

Location		Owner Information		Assessment History				
Parcel Number 1-015-070-016-007		Owner Name 528 ROCKAWAY LLC AND JB CENTER LLC		Actual Value (2023)		\$577		
Tax Area 510CSH_NR - 510CSH_NR		In Care Of Name C/O ALLEN SIGMON REAL ESTATE		Primary Taxable		\$192		
Situs Address		Owner Address 9201 MONTGOMERY BLVD NE BLDG 1		Tax Area: 510CSH_NR		Mill Levy: 41.640		
Legal Summary Legal: S: 21 T: 12N R: 3E S: 22 T: 12N R: 3E Subd: INDUSTRIAL PARK WEST 100' D.E.		ALBUQUERQUE, NM 87111-2468		Type	Actual	Assessed	Acres	SQFT Units
		UNITED STATES OF AMERICA		Non-Residential Land	\$577	\$192	1.154	50268.240 1.000
Transfers								
Sale Date		Doc Description						
02/10/2022		WARRANTY DEED						
		WARRANTY DEED						
		QUIT CLAIM DEED						
		PLAT						
Images								
Tax Year		Taxes		GIS				
*2024		\$8.00						
2023		\$8.00						
* Estimated								

Account: R026029

Location		Owner Information		Assessment History					
Parcel Number 1-015-070-027-062		Owner Name 221 RIO RANCHO ROAD LLC		Actual Value (2024) \$1,888,895					
Tax Area 510CSH_NR - 510CSH_NR		Owner Address 1717 LOUISIANA BLVD NE STE 111		Primary Taxable \$629,632					
Situs Address 221 RIO RANCHO DR		ALBUQUERQUE, NM 87110-7014		Tax Area: 510CSH_NR Mill Levy: 41.640					
Legal Summary Legal: S: 16 T: 12N R: 3E Subd: INDUSTRIAL PARK WEST Tract: C1		UNITED STATES OF AMERICA							
				Type	Actual	Assessed	Acres	SQFT	Units
				Non-Residential Land	\$1,069,013	\$356,338	5.102	222248.000	2.000
				Non-Residential Improvement	\$819,882	\$273,294		124219.000	
Transfers									
Sale Date				Doc Description					
<u>06/28/2023</u>				<u>WARRANTY DEED</u>					
				<u>SPECIAL WARRANTY DEED</u>					
				<u>SPECIAL WARRANTY DEED</u>					
				<u>SPECIAL WARRANTY DEED</u>					
				<u>AGREEMENT</u>					
Images									
Tax Year		Taxes	Map	Photo	Sketch	GIS			
*2024		\$26,217.88							
2023		\$6,297.36							
* Estimated			Focusing On: 221 RIO RANCHO DR RIO RANCHO 87124						

Dear **Neighbor**,

**AerSale, Inc.** announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its **Airplane Restoration** facility. The expected date of application submittal to the Air Quality Bureau is **September 13th, 2024**.

The exact location for the proposed facility known as, **AerSale Component Solutions**, is at **4901 Rockaway Blvd. NE, Rio Rancho, NM 87124**. The approximate location of this facility is **1.6 miles north-northwest of Corrales, NM** in **Sandoval** county.

The proposed **modification** consists of the addition of one (1) small paint booth (PAINT-3) and two (2) dust collectors associated with abrasive blasting (DC-1 & DC-2), and the removal of an existing large paint booth (PAINT-2). The paint booth will be inside an existing building on the site. Finally, the list of paints used in the existing paint booth (PAINT-1) will be updated based on current operations.

The estimated maximum quantities of any regulated air contaminant will be as follows in pound per hour (pph) and tons per year (tpy) and may change slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per year
PM <sub>10</sub>	1	1
PM <sub>2.5</sub>	1	1
Sulfur Dioxide (SO <sub>2</sub> )	0	0
Nitrogen Oxides (NO <sub>x</sub> )	1	1
Carbon Monoxide (CO)	1	1
Volatile Organic Compounds (VOC)	26	1
Total sum of all Hazardous Air Pollutants (HAPs)	9	1
Toxic Air Pollutant (TAP)	17	1
Green House Gas Emissions as Total CO <sub>2</sub> e	N/A	<75,000

The standard and maximum operating schedules of the facility will be from 5:00 a.m. to 11:30 p.m. The facility will operate 18.5 hours a day, 5 days a week, and 52 weeks per year.

The owner and/or operator of the Facility is:

**AerSale Component Solutions**  
**4901 Rockaway Blvd. NE,**  
**Rio Rancho, NM 87124**

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

Please refer to the company name and facility name, or send a copy of this notice along with your comments, since the Department may have not yet received the permit application. Please include a legible return mailing address with your comments. Once the Department has performed a preliminary review of the

application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

**Atención**

Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta área. Si usted desea información en español, por favor comuníquese con esa oficina al teléfono 505-629-3395.

Sincerely,

**AerSale Component Solutions**

**4901 Rockaway Blvd. NE,**

**Rio Rancho, NM 87124**

**Notice of Non-Discrimination**

NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Part 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, or if you believe that you have been discriminated against with respect to a NMED program or activity, you may contact: Non-Discrimination Coordinator, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, [nd.coordinator@env.nm.gov](mailto:nd.coordinator@env.nm.gov). You may also visit our website at <https://www.env.nm.gov/non-employee-discrimination-complaint-page/> to learn how and where to file a complaint of discrimination.

Dear **County Manager**,

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PM <sub>10</sub>	1	1
PM <sub>2.5</sub>	1	1
Sulfur Dioxide (SO <sub>2</sub> )	0	0
Nitrogen Oxides (NO <sub>x</sub> )	1	1
Carbon Monoxide (CO)	1	1
Volatile Organic Compounds (VOC)	26	1
Total sum of all Hazardous Air Pollutants (HAPs)	9	1
Toxic Air Pollutant (TAP)	17	1
Green House Gas Emissions as Total CO <sub>2</sub> e	N/A	<75,000

The standard and maximum operating schedules of the facility will be from 5:00 a.m. to 11:30 p.m. The facility will operate 18.5 hours a day, 5 days a week, and 52 weeks per year.

The owner and/or operator of the Facility is:

**AerSale Component Solutions**

**4901 Rockaway Blvd. NE,**

**Rio Rancho, NM 87124**

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

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Sincerely,

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**4901 Rockaway Blvd. NE,**

**Rio Rancho, NM 87124**

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Dear **City Manager**,

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PM <sub>10</sub>	1	1
PM <sub>2.5</sub>	1	1
Sulfur Dioxide (SO <sub>2</sub> )	0	0
Nitrogen Oxides (NO <sub>x</sub> )	1	1
Carbon Monoxide (CO)	1	1
Volatile Organic Compounds (VOC)	26	1
Total sum of all Hazardous Air Pollutants (HAPs)	9	1
Toxic Air Pollutant (TAP)	17	1
Green House Gas Emissions as Total CO <sub>2</sub> e	N/A	<75,000

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The owner and/or operator of the Facility is:

**AerSale Component Solutions**

**4901 Rockaway Blvd. NE,**

**Rio Rancho, NM 87124**

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Sincerely,

**AerSale Component Solutions**

**4901 Rockaway Blvd. NE,**

**Rio Rancho, NM 87124**

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Dear **Pueblo of Sandia**,

**AerSale, Inc.** announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its **Airplane Restoration** facility. The expected date of application submittal to the Air Quality Bureau is **September 13th, 2024**.

The exact location for the proposed facility known as, **AerSale Component Solutions**, is at **4901 Rockaway Blvd. NE, Rio Rancho, NM 87124**. The approximate location of this facility is **1.6 miles north-northwest of Corrales, NM** in **Sandoval** county.

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Carbon Monoxide (CO)	1	1
Volatile Organic Compounds (VOC)	26	1
Total sum of all Hazardous Air Pollutants (HAPs)	9	1
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Green House Gas Emissions as Total CO <sub>2</sub> e	N/A	<75,000

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The owner and/or operator of the Facility is:

**AerSale Component Solutions**

**4901 Rockaway Blvd. NE,**

**Rio Rancho, NM 87124**

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Please refer to the company name and facility name, or send a copy of this notice along with your comments, since the Department may have not yet received the permit application. Please include a legible return mailing address with your comments. Once the Department has performed a preliminary review of the

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Sincerely,

**AerSale Component Solutions**

**4901 Rockaway Blvd. NE,**

**Rio Rancho, NM 87124**

**Notice of Non-Discrimination**

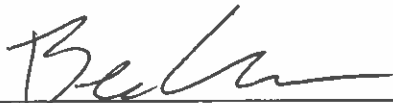
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## General Posting of Notices – Certification

I, Beau Garner, the undersigned, certify that on **{DATE}**, posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in the **{CITY\TOWN\VILLAGE}** of **{COUNTY NAME}** County, State of New Mexico on the following dates:

1. Facility entrance {DATE} 9-10-24
2. {Location 2}{DATE} Esther Bone Memorial Library 9-13-24
3. {Location 3}{DATE} Premier Cinemas / Legacy Church 9-13-24
4. {Location 4}{DATE} Albertsons Market 9-13-24

Signed this 13 day of September, 2024.

  
Signature

9-13-24  
Date

Beau Garner  
Printed Name

Sr. Project Manager  
Title {APPLICANT OR RELATIONSHIP TO APPLICANT}

# NOTICE

**AerSale, Inc.** announces its application to the New Mexico Environment Department for an air quality permit for the **modification** of its **Airplane Restoration** facility. The expected date of application submittal to the Air Quality Bureau is **September 13th, 2024**.

The exact location for the proposed facility known as, **AerSale Component Solutions**, is at **4901 Rockaway Blvd. NE, Rio Rancho, NM 87124**. The approximate location of this facility is **1.6 miles north-northwest of Corrales, NM** in **Sandoval** county.

The proposed **modification** consists of the addition of one (1) small paint booth (PAINT-3) and two (2) dust collectors associated with abrasive blasting (DC-1 & DC-2), and the removal of an existing large paint booth (PAINT-2). The paint booth will be inside an existing building on the site. Finally, the list of paints used in the existing paint booth (PAINT-1) will be updated based on current operations.

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Nitrogen Oxides (NO <sub>x</sub> )	1	1
Carbon Monoxide (CO)	1	1
Volatile Organic Compounds (VOC)	26	1
Total sum of all Hazardous Air Pollutants (HAPs)	9	1
Toxic Air Pollutant (TAP)	17	1
Green House Gas Emissions as Total CO <sub>2</sub> e	N/A	<75,000

The standard and maximum operating schedules of the facility will be from 5:00 a.m. to 11:30 p.m. The facility will operate 18.5 hours a day, 5 days a week, and 52 weeks per year.

The owner and/or operator of the Facility is:

**AerSale Component Solutions**  
**4901 Rockaway Blvd. NE,**  
**Rio Rancho, NM 87124**

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

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PLEASE RING BELL  
BEFORE ENTERING





# NOTICE

AirFate, Inc. announces its application to the New Mexico Environment Department for an air quality permit for the modification of its Airborne Restoration facility. The expected date of application submitted to the Air Quality Bureau is September 13th, 2014.

The exact location for the proposed facility known as, AirFate Component Solutions, is at 4901 Rockaway Blvd NE, Rio Rancho, NM 87134. The approximate location of this facility is 3.8 miles north-northwest of Corralito, NM in Sandford county.

The proposed modification consists of the addition of one (1) small paint booth (Paint 2) and two (2) dust collectors associated with abrasive blasting (DC 1 & DC 2), and the removal of an existing large paint booth (Paint 1). The paint booth will be inside an existing building on the site. Finally, the list of parts used in the existing paint booth (Paint 1) will be submitted based on current operations.

The estimated maximum quantities of any regulated air contaminant will be as follows in pounds per hour (lph) and tons per year (tpy) and may change slightly during the course of the Department's review.

Pollutant	Pounds per hour	Tons per year
PM 10	1	0
PM 2.5	1	0
Sulfur Dioxide (SO2)	0	0
Nitrogen Dioxide (NO2)	1	1
Carbon Monoxide (CO)	1	1
Volatile Organic Compounds (VOC)	26	1
Total sum of all Hazardous Air Pollutants (Snaph)	9	1
Total Air Pollutants (TAP)	17	1
Green House Gas Emissions as Total CO2e	N/A	<15,000

The standard and maximum operating schedule of the facility will be from 8:00 a.m. to 5:00 p.m. The facility will operate 18.1 hours a day, 5 days a week, and 102 weeks per year.

The owner and/or operator of the facility is AirFate Component Solutions.

4901 Rockaway Blvd. NE,  
Rio Rancho, NM 87134

If you have any comments about the construction or operation of the facility, and you want your comments to be made a part of the permit review process, you must submit your comments in writing to the address: Permit Programs Manager, New Mexico Environment Department, Air Quality Bureau, 501 Camino de las Mariposas, Suite 1, Santa Fe, New Mexico 87505-0614. Other comments and questions may be submitted verbally. (505) 476-6566 / (800) 1-674-7666.

With your comments, please refer to the company name and facility name, and send a copy of this notice along with your comments. This information is necessary when the Department may find out and respond to the permit application. Please include a telephone number and address. Once the Department has completed its

preliminary review of the Application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

#### Attestate

Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, escrito de las emisiones producidas por un modificación en una planta. Se solicitó dicha información en español, pero fueron proporcionadas con otro idioma en español. 505-476-6566.

#### Notice of Non-Discrimination

AMND states non-discrimination on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, in response to applicable laws and regulations. AMND is responsible for coordination of compliance efforts and receipt of requests concerning non-discrimination requirements implemented by 40 C.F.R. Part 1, including Title VI of the Civil Rights Act of 1964, as amended, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 1557 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of AMND's non-discrimination programs, policies or procedures, or if you believe that you have been discriminated against with respect to a AMND program or activity, you may contact Non-Discrimination Administrator, Agency, 1000 N. Franklin St., Suite 4000 # 2, New York, Texas 75004-4000, (202) 612-1000, or [non-discrimination@epa.gov](mailto:non-discrimination@epa.gov). You may also call our website at <http://www.epa.gov/non-discrimination> or contact your local office to learn how and where to file a complaint of discrimination.



**AerSale Component Solutions**  
**Property Owners**

---

Property Owners			
Account	Owner Name	Address	City/State/ZIP
R123384	ABRUVEST LLC	820 S MONACO PKWY #102	DENVER, CO 80224-3703
R143824	528 ROCKAWAY LLC AND JB CENTER LLC	9201 MONTGOMERY BLVD NE BLDG 1	ALBUQUERQUE, NM 87111-2468
R026029	221 RIO RANCHO ROAD LLC	1717 LOUISIANA BLVD NE STE 111	ALBUQUERQUE, NM 87110-7014

**AerSale Component Solutions****TRIBES, COUNTIES, & MUNICIPALITIES WITHIN 10 MILE RADIUS**

TRIBES					
PUEBLO OF SANDIA	ENVIRONMENT DEPARTMENT	481 SANDIA LOOP	BERNALILLO	NM	87004
PUEBLO OF SANTA ANA	TAMAYA PUEBLO	2 DOVE RD	PUEBLO OF SANTA ANA	NM	87004
COUNTIES					
SANDOVAL COUNTY	COUNTY MANAGER	1500 IDALIA RD, BUILDING D	BERNALILLO	NM	87004
BERNALILLO COUNTY	COUNTY MANAGER	1 CIVIC PLAZA NM, 10TH FLOOR	ALBUQUERQUE	NM	87102
MUNICIPALITIES					
RIO RANCHO	CITY MANAGER	3200 CIVIC CENTER CIR NE	RIO RANCHO	NM	87144
ALBUQUERQUE	CITY MANAGER	1 CIVIC PLAZA NM, 10TH FLOOR	ALBUQUERQUE	NM	87102
BERNALILLO	CITY MANAGER	829 S CAMINO DEL PUEBLO	BERNALILLO	NM	87004
CORRALES	CITY MANAGER	4324 CORRALES RD	CORRALES	NM	87048
LOS RANCHOS DE ALBUQUERQUE	CITY MANAGER	6718 RIO GRANDE BLVD NW	LOS RANCHOS DE ALBUQUERQUE	NM	87107

## Submittal of Public Service Announcement – Certification

I, JOHNNY NGUYEN, the undersigned, certify that on **September 13, 2024**, submitted a public service announcement to **RADIO 92.3 KRST** that serves the city of **Rio Rancho, Sandoval County, New Mexico**, in which the source is or is proposed to be located and that **Radio 92.3 KRST DID NOT RESPOND**.

Signed this 13 day of September, 2024.

Signature



9/13/24  
Date

Printed Name

Johnny Nguyen

TRINITY CONSULTANTS  
Title {APPLICANT OR RELATIONSHIP TO APPLICANT}

**From:** [Johnny Nguyen](#)  
**To:** [jason.martinez@cumulus.com](mailto:jason.martinez@cumulus.com)  
**Cc:** [Daniel Dolce](#)  
**Subject:** PSA Request for Air Quality Permit Revision  
**Date:** Friday, September 13, 2024 2:43:00 PM  
**Attachments:** [image001.png](#)  
[image003.png](#)

---

Dear Radio 92.3 KRST,

Per New Mexico Administrative Code 20.2.72.203.B NMAC and according to the Guidance for Public Notice for Air Quality Permit Applications – **(5) Notifications: Submittal of Public Service Announcement (PSA):** A public service announcement required for permits and significant permit revisions must be submitted to at least one radio or television station, which services the municipality, or county which the facility is or will be located. **Therefore, based on the above, we respectfully ask you to air the information shown below as a Public Service Announcement.**

The public service announcement request must contain the following information about the facility or proposed facility (20.2.72.203.D NMAC).

- a. The name: **AerSale Component Solutions**, location: **4901 Rockaway Blvd. NE, Rio Rancho, NM 87124** and type of business: **Airplane Restoration**.
- b. The name and principle owner or operator: **AerSale, Inc.** – owner and operator.
- c. The type of process or change for which the permit is sought: **NSR Significant Revision – the addition of one (1) small paint booth (PAINT-3) and two (2) dust collectors associated with abrasive blasting (DC-1 and DC-2), and the removal of an existing large paint booth (PAINT-2). The paint booth will be inside an existing building on the site. Finally, the list of paints used in the existing paint booth (PAINT-1) will be updated based on current operations.**
- d. Locations where the notices have been posted in Rio Rancho, NM 87124:  
**(1) AerSale Component Solutions Facility Entrance**  
**(2) Esther Bone Memorial Library**  
**(3) Premier Cinemas/Legacy Church**  
**(4) Albertsons Market.**
- e. The Department's address or telephone number to which comments may be directed: **Permits Program manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez; Suite 1, Santa Fe, New Mexico, 87505-1816; (505) 476-4300; 1(800) 224-7009.**

Thank you and regards,

**Johnny Nguyen**  
Associate Consultant

P 505.266.6611  
Email: [Johnny.Nguyen@trinityconsultants.com](mailto:Johnny.Nguyen@trinityconsultants.com)  
9400 Holly Avenue NE, Building 3, Suite B, Albuquerque, NM 87122



Connect with us: [LinkedIn](#) / [YouTube](#) / [trinityconsultants.com](http://trinityconsultants.com)  
View our capabilities in the [Environmental Consulting](#), [Built Environment](#), [Life Sciences](#), and [Water & Ecology](#)

*markets.*

**Johnny Nguyen**

Associate Consultant

P 505.266.6611

Email: [Johnny.Nguyen@trinityconsultants.com](mailto:Johnny.Nguyen@trinityconsultants.com)

9400 Holly Avenue NE, Building 3, Suite B, Albuquerque, NM 87122



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View our capabilities in the [Environmental Consulting](#), [Built Environment](#), [Life Sciences](#), and [Water & Ecology](#) markets.

## Affidavit of Publication

STATE OF NEW MEXICO }  
COUNTY OF SANDOVAL }

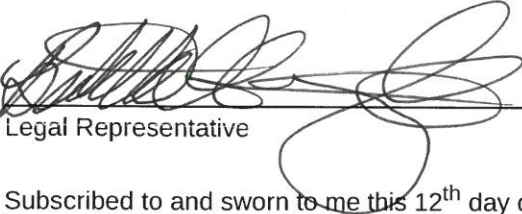
Ad Cost: \$786.87  
Ad Number: 102340  
Account Number: 1023565  
Classification: NON-GOVERNMENT LEGALS

I, Bernadette Gonzales, the undersigned, Legal Representative of the Rio Rancho Observer, on oath state that this newspaper is duly qualified to publish notices or advertisements within the meaning of Sec chapter 167, Session Laws of 1937, and payment of has been made of assessed and a copy of which is attached, was published in said publication in the day edition, 1 times(s) on the following date(s):

September 12, 2024

That said newspaper was regularly issued and circulated on those dates.

SIGNED:

  
Legal Representative

Subscribed to and sworn to me this 12<sup>th</sup> day of Sep 2024.

David Lindsey Montoya  
Notary Public

County Bernalillo  
ID#: 1140229  
My commission expires: 04-26-2027

## NOTICE OF AIR QUALITY PERMIT APPLICATION

Aersale, Inc. announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its **Airplane Restoration** facility. The expected date of application submittal to the Air Quality Bureau is **September 13th, 2024**.

The exact location for the proposed facility known as, **AerSale Component Solutions**, is at **4901 Rockaway Blvd. NE, Rio Rancho, NM 87124**. The approximate location of this facility is **1.6 miles north-north-west of Corrales, NM in Sandoval county**.

The proposed **modification** consists of the addition of one (1) small paint booth (PAINT-3) and two (2) dust collectors associated with abrasive blasting (DC-1 & DC-2), and the removal of an existing large paint booth (PAINT-2). The paint booth will be inside an existing building on the site. Finally, the list of paints used in the existing paint booth (PAINT-1) will be updated based on current operations.

The estimated maximum quantities of any regulated air contaminant will be as follows in pound per hour (pph) and tons per year (tpy) and could change slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per year
PM <sub>10</sub>	1	1
PM <sub>2.5</sub>	1	1
Sulfur Dioxide (SO <sub>2</sub> )	0	0
Nitrogen Oxides (NO <sub>x</sub> )	1	1
Carbon Monoxide (CO)	1	1
Volatile Organic Compounds (VOC)	26	1
Total sum of all Hazardous Air Pollutants (HAPs)	9	1
Toxic Air Pollutant (TAP)	17	1
Green House Gas Emissions as Total CO <sub>2</sub> e	N/A	<75,000

The standard and maximum operating schedules of the facility will be from 5:00 a.m. to 11:30 p.m. The facility will operate 18.5 hours a day, 5 days a week, and 52 weeks per year.

The owner and/or operator of the Facility is:

**Aersale Component Solutions**  
**4901 Rockaway Blvd. NE,**  
**Rio Rancho, NM 87124**

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

Please refer to the company name and site name, or send a copy of this notice along with your comments, since the Department may have not yet received the permit application. Please include a legible return mailing address with your comments. Once the Department has performed a preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

General information about air quality and the permitting process, and links to the regulations can be found at: <https://www.nm.gov/air-quality/permitting-section-home-page/>.

STATE OF NEW MEXICO  
NOTARY PUBLIC  
DAVID LINDSEY MONTOYA  
COMMISSION NUMBER 1140229  
EXPIRATION DATE 04-26-2027

TRINITY CONSULTANTS  
9400 HOLLY AVE BUILDING 3 SUITE 300  
ALBUQUERQUE, NM 87122



# Affidavit of Publication

STATE OF NEW MEXICO }  
COUNTY OF SANDOVAL }


Ad Cost: \$486.59  
Ad Number: 102360  
Account Number: 1023565  
Classification: NON-GOVERNMENT LEGALS

I, Bernadette Gonzales, the undersigned, Legal Representative of the Rio Rancho Observer, on oath state that this newspaper is duly qualified to publish notices or advertisements within the meaning of Sect chapter 167, Session Laws of 1937, and payment of has been made of assessed and a copy of which is h attached, was published in said publication in the dai edition, 1 times(s) on the following date(s):

September 12, 2024

That said newspaper was regularly issued and circula on those dates.

SIGNED:

  
Legal Representative

Subscribed to and sworn to me this 12<sup>th</sup> day of September 2024.

David Lindsey Montoya  
Notary Public

County Bernalillo  
ID#: 1140229  
My commission expires: 04-26-2027

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PM <sub>10</sub>	1	1
PM <sub>2.5</sub>	1	1
Sulfur Dioxide (SO <sub>2</sub> )	0	0
Nitrogen Oxides (NO <sub>x</sub> )	1	1
Carbon Monoxide (CO)	1	1
Volatile Organic Compounds (VOC)	26	1
Total sum of all Hazardous Air Pollutants (HAPs)	9	1
Toxic Air Pollutant (TAP)	17	1
Green House Gas Emissions as Total CO <sub>2</sub> e	N/A	<75,000

The standard and maximum operating schedules of the facility will be from 5:00 a.m. to 11:30 p.m. The facility will operate 18.5 hours a day, 5 days a week, and 52 weeks per year.

The owner and/or operator of the Facility is:

**Aersale Component Solutions**  
**4901 Rockaway Blvd. NE,**  
**Rio Rancho, NM 87124**

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

Please refer to the company name and site name, or send a copy of this notice along with your comments, to the Department.

STATE OF NEW MEXICO  
NOTARY PUBLIC  
DAVID LINDSEY MONTOYA  
COMMISSION NUMBER 1140229  
EXPIRATION DATE 04-26-2027

TRINITY CONSULTANTS  
9400 HOLLY AVE BUILDING 3 SUITE 300  
ALBUQUERQUE, NM 87122

# Section 10

## Written Description of the Routine Operations of the Facility

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**A written description of the routine operations of the facility.** Include a description of how each piece of equipment will be operated, how controls will be used, and the fate of both the products and waste generated. For modifications and/or revisions, explain how the changes will affect the existing process. In a separate paragraph describe the major process bottlenecks that limit production. The purpose of this description is to provide sufficient information about plant operations for the permit writer to determine appropriate emission sources.

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The AerSale facility repairs and restores airplane component and equipment such as thrust reversers, cargo doors, and flight control surfaces. Repairs and restoration includes mechanical component repairs, composite flight surface repairs, welding, and painting or metal plating of finished product. Other operations includes grinding, sanding, abrasive blasting, and use of solvent cleaners to repair and restore airplane components. The painting operations, metal plating operations and thermal metal sprayer operations are considered here, as the other activities at the facility are exempt, such as the blasting operations and usage of forklift trucks, etc.

Airplane equipment is repaired in various sections of the facility before being sent to the paint booth or metal plating sections of the facility. Most metal plating process involves cleaning the airplane parts using solvent and water rinse bathes before being immersed in one or more process tanks for set amount of time. Once the plating is complete, the equipment is washed in one or more of the rinse tanks before being placed to dry.

Equipment is prepped in staging area near the paint shop before being moved into the paint booths. The spray gun at the AerSale facility operates at high pressure; therefore, emissions have been calculated with the associated 30% transfer efficiency. High volume low pressure (HVLP) guns have a higher transfer efficiency but are not currently used at this facility. In the event that AerSale needs to use a HVLP spray gun, emissions would be lower than currently calculated.

Most equipment gets two coats of paint; a primer coat and a color coat. Typical drying time is about 4 to 6 hours, after which time the equipment can be handled without damaging the paint. Primed equipment may be moved out of the booth to dry if it can be handled without damage; otherwise, it remains in the booth between coats.

Solids, VOC, HAP, and TAP content of the paints vary, although within a group (epoxy, primer, color) the compositions are similar. For purposes of this application the maximum solid, VOC, HAP, and TAP concentration of all paints in use was identified and used as the basis of the calculations.



# Section 11

## Source Determination

Source submitting under 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC

Sources applying for a construction permit, PSD permit, or operating permit shall evaluate surrounding and/or associated sources (including those sources directly connected to this source for business reasons) and complete this section. Responses to the following questions shall be consistent with the Air Quality Bureau's permitting guidance, Single Source Determination Guidance, which may be found on the Applications Page in the Permitting Section of the Air Quality Bureau website.

Typically, buildings, structures, installations, or facilities that have the same SIC code, that are under common ownership or control, and that are contiguous or adjacent constitute a single stationary source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes. Submission of your analysis of these factors in support of the responses below is optional, unless requested by NMED.

### A. Identify the emission sources evaluated in this section (list and describe):

Refer to Table 2-A.

### B. Apply the 3 criteria for determining a single source:

**SIC Code:** Surrounding or associated sources belong to the same 2-digit industrial grouping (2-digit SIC code) as this facility, OR surrounding or associated sources that belong to different 2-digit SIC codes are support facilities for this source.

☒ **Yes**      ☐ **No**

**Common Ownership or Control:** Surrounding or associated sources are under common ownership or control as this source.

☒ **Yes**      ☐ **No**

**Contiguous or Adjacent:** Surrounding or associated sources are contiguous or adjacent with this source.

☒ **Yes**      ☐ **No**

### C. Make a determination:

- ☒ The source, as described in this application, constitutes the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes. If in "A" above you evaluated only the source that is the subject of this application, all "YES" boxes should be checked. If in "A" above you evaluated other sources as well, you must check **AT LEAST ONE** of the boxes "NO" to conclude that the source, as described in the application, is the entire source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes.
- ☐ The source, as described in this application, **does not** constitute the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes (A permit may be issued for a portion of a source). The entire source consists of the following facilities or emissions sources (list and describe):

# Section 12

## Section 12.A

### PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

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**A PSD applicability determination for all sources.** For sources applying for a significant permit revision, apply the applicable requirements of 20.2.74.AG and 20.2.74.200 NMAC and to determine whether this facility is a major or minor PSD source, and whether this modification is a major or a minor PSD modification. It may be helpful to refer to the procedures for Determining the Net Emissions Change at a Source as specified by Table A-5 (Page A.45) of the EPA New Source Review Workshop Manual to determine if the revision is subject to PSD review.

A. This facility is:

- ☒ a minor PSD source before and after this modification (if so, delete C and D below).
- ☐ a major PSD source before this modification. This modification will make this a PSD minor source.
- ☐ an existing PSD Major Source that has never had a major modification requiring a BACT analysis.
- ☐ an existing PSD Major Source that has had a major modification requiring a BACT analysis
- ☐ a new PSD Major Source after this modification.

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This application is for an NSR significant revision.

# Section 13

## Determination of State & Federal Air Quality Regulations

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**This section lists each state and federal air quality regulation that may apply to your facility and/or equipment that are stationary sources of regulated air pollutants.**

Not all state and federal air quality regulations are included in this list. Go to the Code of Federal Regulations (CFR) or to the Air Quality Bureau's regulation page to see the full set of air quality regulations.

### **Required Information for Specific Equipment:**

For regulations that apply to specific source types, in the 'Justification' column **provide any information needed to determine if the regulation does or does not apply**. For example, to determine if emissions standards at 40 CFR 60, Subpart IIII apply to your three identical stationary engines, we need to know the construction date as defined in that regulation; the manufacturer date; the date of reconstruction or modification, if any; if they are or are not fire pump engines; if they are or are not emergency engines as defined in that regulation; their site ratings; and the cylinder displacement.

### **Required Information for Regulations that Apply to the Entire Facility:**

See instructions in the 'Justification' column for the information that is needed to determine if an 'Entire Facility' type of regulation applies (e.g. 20.2.70 or 20.2.73 NMAC).

### **Regulatory Citations for Regulations That Do Not, but Could Apply:**

If there is a state or federal air quality regulation that does not apply, but you have a piece of equipment in a source category for which a regulation has been promulgated, you must **provide the low level regulatory citation showing why your piece of equipment is not subject to or exempt from the regulation**. For example if you have a stationary internal combustion engine that is not subject to 40 CFR 63, Subpart ZZZZ because it is an existing 2 stroke lean burn stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, your citation would be 40 CFR 63.6590(b)(3)(i). **We don't want a discussion of every non-applicable regulation, but if it is possible a regulation could apply, explain why it does not**. For example, if your facility is a power plant, you do not need to include a citation to show that 40 CFR 60, Subpart OOO does not apply to your non-existent rock crusher.

### **Regulatory Citations for Emission Standards:**

**For each unit that is subject to an emission standard in a source specific regulation, such as 40 CFR 60, Subpart OOO or 40 CFR 63, Subpart HH, include the low level regulatory citation of that emission standard.** Emission standards can be numerical emission limits, work practice standards, or other requirements such as maintenance. **Here are examples:** a glycol dehydrator is subject to the general standards at 63.764C(1)(i) through (iii); an engine is subject to 63.6601, Tables 2a and 2b; a crusher is subject to 60.672(b), Table 3 and all transfer points are subject to 60.672(e)(1)

### **Federally Enforceable Conditions:**

All federal regulations are federally enforceable. All Air Quality Bureau State regulations are federally enforceable except for the following: affirmative defense portions at 20.2.7.6.B, 20.2.7.110(B)(15), 20.2.7.11 through 20.2.7.113, 20.2.7.115, and 20.2.7.116; 20.2.37; 20.2.42; 20.2.43; 20.2.62; 20.2.63; 20.2.86; 20.2.89; and 20.2.90 NMAC. Federally enforceable means that EPA can enforce the regulation as well as the Air Quality Bureau and federally enforceable regulations can count toward determining a facility's potential to emit (PTE) for the Title V, PSD, and nonattainment permit regulations.

INCLUDE ANY OTHER INFORMATION NEEDED TO COMPLETE AN APPLICABILITY DETERMINATION OR THAT IS RELEVANT TO YOUR FACILITY'S NOTICE OF INTENT OR PERMIT.

EPA Applicability Determination Index for 40 CFR 60, 61, 63, etc: <http://cfpub.epa.gov/adi/>

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**Table for State Regulations:**

<a href="#">State Regulation Citation</a>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.1 NMAC	General Provisions	Yes	Facility	General Provisions apply to Notice of Intent, Construction, and Title V permit applications.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	Yes	Facility	20.2.3 NMAC is a State Implementation Plan (SIP) approved regulation that limits the maximum allowable concentration of Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide. The facility meets maximum allowable concentrations of SO <sub>2</sub> , H <sub>2</sub> S, NO <sub>x</sub> , and CO under this regulation.
20.2.7 NMAC	Excess Emissions	Yes	Facility	This regulation establishes requirements for the facility if operations at the facility result in any excess emissions. The owner or operator will operate the source at the facility having an excess emission, to the extent practicable, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions. The facility will also notify the NMED of any excess emissions per 20.2.7.110 NMAC.
20.2.23 NMAC	Fugitive Dust Control	No	Facility	This regulation does not apply because this application is not a notice of intent (NOI).
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	This facility does not have oil burning equipment (external combustion emission sources, such as oil fired boilers and heaters) having a heat input of greater than 1,000,000 million British Thermal Units per year per unit. The facility is not subject to this regulation and does not have emission sources that meet the applicability requirements under 20.2.34.108 NMAC.
20.2.34 NMAC	Oil Burning Equipment: NO <sub>2</sub>	No	N/A	This facility does not have oil burning equipment (external combustion emission sources, such as oil fired boilers and heaters) having a heat input of greater than 1,000,000 million British Thermal Units per year per unit. The facility is not subject to this regulation and does not have emission sources that meet the applicability requirements under 20.2.34.108 NMAC..
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No	N/A	This regulation establishes sulfur emission standards for natural gas processing plants. This facility is not a natural gas processing plant. The facility is not subject to this regulation.
20.2.37 and 20.2.36 NMAC	Petroleum Processing Facilities and Petroleum Refineries	N/A	N/A	These regulations were repealed by the Environmental Improvement Board. If you had equipment subject to 20.2.37 NMAC before the repeal, your combustion emission sources are now subject to 20.2.61 NMAC.
20.2.38 NMAC	Hydrocarbon Storage Facility	No	N/A	This regulation does not apply because this facility is not a petroleum production facility and does not possess tanks for use of petroleum storage or hydrocarbon storage.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	This facility is not a sulfur recovery plant.

<a href="#">State Regulation Citation</a>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.50 NMAC	Oil and Gas Sector – Ozone Precursor Pollutants	No	N/A	<p>This regulation establishes emission standards for volatile organic compounds (VOC) and oxides of nitrogen (NOx) for oil and gas production, processing, compression, and transmission sources. 20.2.50 NMAC subparts below:</p> <p>Include the construction status of applicable units as “New”, “Existing”, “Relocation of Existing”, or “Reconstructed” as defined by this Part in your justification:</p> <p>Check the box for the subparts that are applicable:</p> <p><input type="checkbox"/> 113 – Engines and Turbines</p> <p><input type="checkbox"/> 114 – Compressor Seals</p> <p><input type="checkbox"/> 115 – Control Devices and Closed Vent Systems</p> <p><input type="checkbox"/> 116 – Equipment Leaks and Fugitive Emissions</p> <p><input type="checkbox"/> 117 – Natural Gas Well Liquid Unloading</p> <p><input type="checkbox"/> 118 – Glycol Dehydrators</p> <p><input type="checkbox"/> 119 – Heaters</p> <p><input type="checkbox"/> 120 – Hydrocarbon Liquid Transfers</p> <p><input type="checkbox"/> 121 – Pig Launching and Receiving</p> <p><input type="checkbox"/> 122 – Pneumatic Controllers and Pumps</p> <p><input type="checkbox"/> 123 – Storage Vessels</p> <p><input type="checkbox"/> 124 – Well Workovers</p> <p><input type="checkbox"/> 125 – Small Business Facilities</p> <p><input type="checkbox"/> 126 – Produced Water Management Unit</p> <p><input type="checkbox"/> 127 – Flowback Vessels and Preproduction Operations</p> <p>This facility is not an oil and gas production, processing, compression, or transmission source and is therefore not subject to this regulation.</p>
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	HTR-1	This regulation establishes controls on smoke and visible emissions from certain sources including stationary combustion equipment. Unit HTR-1 is stationary combustion source; therefore, subject to this regulation and will comply with the requirements.
20.2.70 NMAC	Operating Permits	No	Facility	This regulation establishes requirements for obtaining an operating permit. The facility is not subject to this regulation because the source is not major for any pollutants.
20.2.71 NMAC	Operating Permit Fees	No	Facility	This regulation establishes a schedule of operating permit emission fees. The facility is not subject to 20.2.70 NMAC and in turn not subject to 20.2.71 NMAC.
20.2.72 NMAC	Construction Permits	Yes	Facility	This regulation established the requirements for obtaining a construction permit. The facility will be a stationary source that has potential emission rate greater than 10 pounds per hour and/or more than 25 tons of any regulated air contaminant for which there is a national or New Air Quality Standard; therefore, this regulation applies.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	This facility has a potential emission rate greater than 10 pounds per hour and/or 25 tons per year of any regulated air contaminant; therefore the facility is subject to this regulation.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No	Facility	This regulation establishes requirements for obtaining a prevention of significant deterioration permit. This facility will not be a PSD major source thus this regulation does not apply.
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	This facility is submitting an application pursuant to 20.2.72 NMAC; therefore, this regulation applies.

<a href="#">State Regulation Citation</a>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.77 NMAC	New Source Performance	No	N/A	This facility does not contain units subject to the requirements of 40 CFR Part 60, and is therefore not subject to this regulation.
20.2.78 NMAC	Emission Standards for HAPS	No	N/A	This facility does not contain units subject to the requirements of 40 CFR Part 61, and is therefore not subject to this regulation.
20.2.79 NMAC	Permits – Nonattainment Areas	No	Facility	This facility is not classified as a major source located in a nonattainment area and is therefore not subject to the requirements of this subpart.
20.2.80 NMAC	Stack Heights	No	N/A	This regulation establishes requirements for the evaluation of stack heights and other dispersion techniques. This regulation does not apply, as all stacks at the facility will follow good engineering practice.
20.2.82 NMAC	MACT Standards for source categories of HAPS	No	N/A	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63. This facility does not have any units subject to the requirements of 40 CFR Part 63 and is therefore not subject to this regulation.

**Table for Applicable Federal Regulations (Note: This is not an exhaustive list):**

<a href="#">Federal Regulation Citation</a>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 50	NAAQS	Yes	Facility	This regulation defines national ambient air quality standards. The facility meets all applicable national ambient air quality standards for NO <sub>x</sub> , CO, SO <sub>2</sub> , H <sub>2</sub> S, PM <sub>10</sub> , and PM <sub>2.5</sub> under this regulation.
NSPS 40 CFR 60, Subpart A	General Provisions	No	N/A	Applies if any other Subpart in 40 CFR 60 applies. This facility does not contain units subject to 40 CFR Part 60 and therefore, this subpart does not apply.
NSPS 40 CFR 60.40a, Subpart Da	Subpart Da, Performance Standards for <b>Electric Utility Steam Generating Units</b>	No	N/A	This regulation establishes standards of performance for electric utility steam generating units. This regulation does not apply because the facility does not operate any electric utility steam generating units.
NSPS 40 CFR 60.40b Subpart Db	<b>Electric Utility Steam Generating Units</b>	No	N/A	This regulation establishes standards of performance for industrial-commercial-institutional steam generating units. This regulation does not apply because the facility does not operate any industrial-commercial-institutional steam generating units.
40 CFR 60.40c, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	No	N/A	This regulation establishes standards of performance for small steam generating units. This regulation does not apply, as the facility does not operate any industrial-commercial-institutional steam generating units.

<a href="#">Federal Regulation Citation</a>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for <b>Storage Vessels for Petroleum Liquids</b> for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and <b>Prior</b> to July 23, 1984	No	N/A	This facility does not have a storage vessel for petroleum liquids greater than 40,000 gallons. Therefore, this regulation does not apply.
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for <b>Volatile Organic Liquid Storage Vessels</b> (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced <b>After</b> July 23, 1984	No	N/A	This facility does not have storage vessels with a capacity greater than or equal to 75 cubic meters. Therefore, this regulation does not apply.
NSPS 40 CFR 60.330 Subpart GG	<b>Stationary Gas Turbines</b>	No	N/A	This regulation establishes standards of performance for stationary gas turbines with a heat input at a peak load equal to or greater than 10 MMBtu/hr based on the lower heating value of the fuel fired and have commenced construction, modification, or reconstruction after October 3, 1977. This regulation is not applicable, as this facility will not have any stationary gas turbines.
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from <b>Onshore Gas Plants</b>	No	N/A	This regulation defines standards of performance for equipment leaks of VOC emissions from onshore natural gas processing plants for which construction, reconstruction, or modification commenced after January 20, 1984, and on or before August 23, 2011. The facility is not subject to this regulation because the facility is not a gas plant.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for <b>Onshore Natural Gas Processing: SO<sub>2</sub> Emissions</b>	No	N/A	This regulation establishes standards of performance for SO <sub>2</sub> emissions from onshore natural gas processing for which construction, reconstruction, or modification of the amine-sweetening unit commenced after January 20, 1984 and on or before August 23, 2011. This regulation is not applicable as the facility is not a natural gas processing plant.
NSPS 40 CFR Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution for which construction, modification or reconstruction commenced after August 23, 2011 and before September 18, 2015	No	N/A	This regulation establishes standards for onshore affected facilities located within the Crude Oil and Natural Gas source category, as defined in § 60.5430a. This regulation is not applicable as this facility is not located in the Crude Oil and Natural Gas source category.

<a href="#">Federal Regulation Citation</a>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NSPS 40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced <b>After</b> September 18, 2015	No	N/A	This regulation establishes standards for onshore affected facilities located within the Crude Oil and Natural Gas source category, as defined in § 60.5430a. This regulation is not applicable as this facility is not located in the Crude Oil and Natural Gas source category.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	This facility does not contain any stationary compression ignition internal combustion engines and is therefore not subject to this regulation.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	No	N/A	This facility does not contain any stationary spark ignition internal combustion engines and is therefore not subject to this regulation.
NSPS 40 CFR 60 Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units	No	N/A	This facility does not contain electric generating units; therefore, this regulation does not apply.
NSPS 40 CFR 60 Subpart UUUU	Emissions Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units	No	N/A	This facility does not contain electric utility generating units; therefore, this regulation does not apply.
NSPS 40 CFR 60, Subparts WWW, XXX, Cc, and Cf	Standards of performance for Municipal Solid Waste (MSW) Landfills	No	N/A	This facility is not a landfill; therefore, this regulation does not apply.
NESHAP 40 CFR 61 Subpart A	General Provisions	No	N/A	There are no units at this facility that are subject to the requirements of 40 CFR Part 61; therefore, this subpart does not apply.
NESHAP 40 CFR 61 Subpart E	National Emission Standards for <b>Mercury</b>	No	N/A	This regulation establishes a national emission standard for mercury. The facility does not have stationary sources which process mercury ore to recover mercury, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and incinerate or dry wastewater treatment plant sludge [40 CFR Part 61.50]. The facility is not subject to this regulation.



<a href="#">Federal Regulation Citation</a>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NESHAP 40 CFR 61 Subpart V	National Emission Standards for <b>Equipment Leaks</b> (Fugitive Emission Sources)	No	N/A	This regulation establishes national emission standards for equipment leaks (fugitive emission sources). The facility does not have equipment that operates in volatile hazardous air pollutant (VHAP) service [40 CFR Part 61.240]. The regulated activities subject to this regulation do not take place at this facility. The facility is not subject to this regulation.
MACT 40 CFR 63, Subpart A	General Provisions	Yes	TANK-7 TANK-10 TANK-15 TANK-22 TANK-27	The Nickel Tank, Cadmium Tanks, and Thermal Metal Sprayer (TANK-7, TANK-10, TANK-15) are subject to MACT 40 CFR 63 Subpart WWWWWW. The Chromium Tanks (TANK-22 & 27) is subject to MACT 40 CFR 63 Subpart N.
40 CFR 63 Subpart N	National Emission Standard for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks	Yes	TANK-22 TANK-27	This regulation defines the provisions for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks. The Chromium tanks are subject to MACT 40 CFR N because the facility as chromium-anodizing tanks. The chromium anodizing tanks will comply with regulation and AerSale has installed a mesh-pad to comply with this requirement.
MACT 40 CFR 63.760 Subpart HH	<b>Oil and Natural Gas Production Facilities</b>	No	N/A	This facility is not an Oil and Natural Gas Production Facility; therefore, this regulation does not apply.
MACT 40 CFR 63 Subpart HHH	Operators of Natural gas transmission and storage facilities	No	N/A	This regulation defines general provisions for relevant standards that have been set under this part. The facility is not subject to this regulation because it is not subject to any other subpart of 40 CFR 63.
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	No	N/A	This facility does not contain Boilers and Process Heaters subject to MACT 40 CFR 63 Subpart DDDDD; therefore, this regulation does not apply.

<a href="#">Federal Regulation Citation</a>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric Utility Steam Generating Unit	No	N/A	This facility does not contain generating units, therefore, this regulation does not apply.
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines ( <b>RICE MACT</b> )	No	N/A	This facility does not contain reciprocating internal combustion engines; therefore, this regulation does not apply.
MACT 40 CFR 63 Subpart HHHHHH	Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources	Yes	PAINT-1	<p>This regulation establishes national emission standards for hazardous air pollutants for area sources involved in paint stripping operations containing methyl chloride, autobody refinishing operations, and spray application of coatings containing target HAP as defined in <a href="#">§ 63.11180</a>.</p> <p>PAINT-1 performs spray application of coatings that contain Nickel which is a target HAP. Therefore, PAINT-1 is subject to the requirements of this regulation. PAINT-3 performs spray application of coatings that do not contain any of the target HAPs and is therefore not subject to this regulation.</p>
MACT 40 CFR 63 Subpart WWWWWW	National Emission Standard for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing	Yes	TANK-7 TANK-10 TANK-15 TANK-22 TANK-27	<p>This regulation defines the provisions for Area Source Standards for Plating and Polishing. The Nickel Tank, Cadmium Tanks, and Thermal Metal Sprayer (TANK-7, TANK-10, TANK-15) are subject to MACT 40 CFR 63 Subpart WWWWWW.</p> <p>The facility is subject to this regulation if electroplating operation occurs other than chromium electroplating; therefore the nickel tank and cadmium tanks are subject to this regulation. The electroplating tanks will comply with regulation and AerSale has installed a mesh-pad eliminator in accordance with §63.11508(2). Additionally, the thermal metal sprayer is subject to this regulation and the thermal metal sprayer will only operate in the confines of the paint booth in accordance with §63.11508(9).</p>
40 CFR 64	<b>Compliance Assurance Monitoring</b>	No	N/A	This facility is not a Title V Major Source; therefore, this regulation does not apply.
40 CFR 68	<b>Chemical Accident Prevention</b>	No	N/A	This facility does not have more than a threshold quantity of a regulated substance in a process, as determined under §68.115 and therefore it is not an affected source.
Title IV – Acid Rain 40 CFR 72	<b>Acid Rain</b>	No	N/A	This facility does not generate commercial electric power or electric power for sale; therefore, it is not subject to this regulation.

<a href="#">Federal Regulation Citation</a>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
Title IV – Acid Rain 40 CFR 73	<b>Sulfur Dioxide Allowance Emissions</b>	No	N/A	This facility does not generate commercial power or electric power for sale; therefore, it is not subject to this regulation.
Title IV-Acid Rain 40 CFR 75	<b>Continuous Emissions Monitoring</b>	No	N/A	This facility does not generate commercial power for sale; therefore, it is not subject to this regulation.
Title IV – Acid Rain 40 CFR 76	<b>Acid Rain Nitrogen Oxides Emission Reduction Program</b>	No	N/A	This facility does not generate commercial power for sale; therefore, it is not subject to this regulation.
Title VI – 40 CFR 82	<b>Protection of Stratospheric Ozone</b>	No	N/A	This facility does not meet any of the applicability criteria listed in 40 CFR Part 82 and is therefore not subject to the requirements of this regulation.

# Section 14

## Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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- ☐ **Title V Sources** (20.2.70 NMAC): By checking this box and certifying this application the permittee certifies that it has developed an Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies defining the measures to be taken to mitigate source emissions during startups, shutdowns, and emergencies as required by 20.2.70.300.D.5(f) and (g) NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.
- ☒ **NSR** (20.2.72 NMAC), **PSD** (20.2.74 NMAC) & **Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has developed an Operational Plan to Mitigate Source Emissions During Malfunction, Startup, or Shutdown defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown as required by 20.2.72.203.A.5 NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.
- ☒ **Title V** (20.2.70 NMAC), **NSR** (20.2.72 NMAC), **PSD** (20.2.74 NMAC) & **Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has established and implemented a Plan to Minimize Emissions During Routine or Predictable Startup, Shutdown, and Scheduled Maintenance through work practice standards and good air pollution control practices as required by 20.2.7.14.A and B NMAC. This plan shall be kept on site or at the nearest field office to be made available to the Department upon request. This plan should not be submitted with this application.
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AerSale will maintain the required planning and excess emission mitigation documentation at the AerSale Component Solutions facility.

# Section 15

## Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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**Alternative Operating Scenarios:** Provide all information required by the department to define alternative operating scenarios. This includes process, material and product changes; facility emissions information; air pollution control equipment requirements; any applicable requirements; monitoring, recordkeeping, and reporting requirements; and compliance certification requirements. Please ensure applicable Tables in this application are clearly marked to show alternative operating scenario.

**Construction Scenarios:** When a permit is modified authorizing new construction to an existing facility, NMED includes a condition to clearly address which permit condition(s) (from the previous permit and the new permit) govern during the interval between the date of issuance of the modification permit and the completion of construction of the modification(s). There are many possible variables that need to be addressed such as: Is simultaneous operation of the old and new units permitted and, if so for example, for how long and under what restraints? In general, these types of requirements will be addressed in Section A100 of the permit, but additional requirements may be added elsewhere. Look in A100 of our NSR and/or TV permit template for sample language dealing with these requirements. Find these permit templates at: [www.env.nm.gov/air-quality/permitting-section-procedures-and-guidance/](http://www.env.nm.gov/air-quality/permitting-section-procedures-and-guidance/). Compliance with standards must be maintained during construction, which should not usually be a problem unless simultaneous operation of old and new equipment is requested.

In this section, under the bolded title “Construction Scenarios”, specify any information necessary to write these conditions, such as: conservative-realistic estimated time for completion of construction of the various units, whether simultaneous operation of old and new units is being requested (and, if so, modeled), whether the old units will be removed or decommissioned, any PSD ramifications, any temporary limits requested during phased construction, whether any increase in emissions is being requested as SSM emissions or will instead be handled as a separate Construction Scenario (with corresponding emission limits and conditions, etc.

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The term “alternative operating scenario” is not defined by regulation. AerSale, Inc. understands this term to apply to one or more sources that may routinely operate with alternative fuels or raw materials and/or on a significantly different schedule that may potentially affect emissions. Based on this understanding, AerSale, Inc. may select different paints and solvents used in their painting operations; however, AerSale will not exceed the emissions limits specified in this application. Using different paints are not considered alternative operating scenarios as long the emission limits are not exceeded, as AerSale understands the term. Additionally, the plating operations at AerSale will not have any alternative operating scenarios.

# Section 16

## Air Dispersion Modeling

- 1) Minor Source Construction (20.2.72 NMAC) and Prevention of Significant Deterioration (PSD) (20.2.74 NMAC) ambient impact analysis (modeling): Provide an ambient impact analysis as required at 20.2.72.203.A(4) and/or 20.2.74.303 NMAC and as outlined in the Air Quality Bureau's Dispersion Modeling Guidelines found on the Planning Section's modeling website. If air dispersion modeling has been waived for one or more pollutants, attach the AQB Modeling Section modeling waiver approval documentation.
- 2) SSM Modeling: Applicants must conduct dispersion modeling for the total short term emissions during routine or predictable startup, shutdown, or maintenance (SSM) using realistic worst case scenarios following guidance from the Air Quality Bureau's dispersion modeling section. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications ([http://www.env.nm.gov/aqb/permit/app\\_form.html](http://www.env.nm.gov/aqb/permit/app_form.html)) for more detailed instructions on SSM emissions modeling requirements.
- 3) Title V (20.2.70 NMAC) ambient impact analysis: Title V applications must specify the construction permit and/or Title V Permit number(s) for which air quality dispersion modeling was last approved. Facilities that have only a Title V permit, such as landfills and air curtain incinerators, are subject to the same modeling required for preconstruction permits required by 20.2.72 and 20.2.74 NMAC.

What is the purpose of this application?	Enter an X for each purpose that applies
New PSD major source or PSD major modification (20.2.74 NMAC). See #1 above.	
New Minor Source or significant permit revision under 20.2.72 NMAC (20.2.72.219.D NMAC). See #1 above. <b>Note:</b> Neither modeling nor a modeling waiver is required for VOC emissions.	X
Reporting existing pollutants that were not previously reported.	
Reporting existing pollutants where the ambient impact is being addressed for the first time.	
Title V application (new, renewal, significant, or minor modification. 20.2.70 NMAC). See #3 above.	
Relocation (20.2.72.202.B.4 or 72.202.D.3.c NMAC)	
Minor Source Technical Permit Revision 20.2.72.219.B.1.d.vi NMAC for like-kind unit replacements.	
Other: i.e. SSM modeling. See #2 above.	
This application does not require modeling since this is a No Permit Required (NPR) application.	
This application does not require modeling since this is a Notice of Intent (NOI) application (20.2.73 NMAC).	
This application does not require modeling according to 20.2.70.7.E(11), 20.2.72.203.A(4), 20.2.74.303, 20.2.79.109.D NMAC and in accordance with the Air Quality Bureau's Modeling Guidelines.	

**Check each box that applies:**

- ☒ See attached, approved modeling **waiver for all** pollutants from the facility.
- ☐ See attached, approved modeling **waiver for some** pollutants from the facility.
- ☐ Attached in Universal Application Form 4 (UA4) is a **modeling report for all** pollutants from the facility.
- ☐ Attached in UA4 is a **modeling report for some** pollutants from the facility.
- ☐ No modeling is required.

<p>New Mexico Environment Department Air Quality Bureau Modeling Section 525 Camino de Los Marquez - Suite 1 Santa Fe, NM 87505</p> <p>Phone: (505) 476-4300 Fax: (505) 476-4375 <a href="http://www.env.nm.gov/air-quality/">www.env.nm.gov/air-quality/</a></p>		<p><b>For Department use only:</b></p> <p>Approved by: Sufi Mustafa</p> <p>Date: 8/14/2024</p>
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### Air Dispersion Modeling Waiver Request Form

This form must be completed and submitted with all air dispersion modeling waiver requests.

If an air permit application requires air dispersion modeling, in some cases the demonstration that ambient air quality standards and Prevention of Significant Deterioration (PSD) increments will not be violated can be satisfied with a discussion of previous modeling. The purpose of this form is to document and streamline requests to certify that previous modeling satisfies all or some of the current modeling requirements. The criteria for requesting and approving modeling waivers are found in the Air Quality Bureau Modeling Guidelines. Typically, only construction permit applications submitted per 20.2.72, 20.2.74, or 20.2.79 NMAC require air dispersion modeling. However, modeling is sometimes also required for a Title V permit application.

A waiver may be requested by e-mailing this completed form in **MS Word** format to the modeling manager, [sufi.mustafa@env.nm.gov](mailto:sufi.mustafa@env.nm.gov).

This modeling waiver is not valid if the emission rates in the application are higher than those listed in the approved waiver request.

#### Section 1 and Table 1: Contact and facility information:

Contact name	Adam Erenstein
E-mail Address:	<a href="mailto:AErenstein@trinityconsultants.com">AErenstein@trinityconsultants.com</a>
Phone	(505) 266-6611
Facility Name	AerSale Component Solutions
Air Quality Permit Number(s)	8491
Agency Interest Number (if known)	35043
Latitude and longitude of facility (decimal degrees)	35.261089 N, 106.637042 W

#### General Comments: (Add introductory remarks or comments here, including the purpose of and type of permit application.)

The AerSale Component Solutions facility is owned and operated by AerSale Component Solutions and is located in Sandoval County in Rio Rancho. Emissions at the facility are associated with surface coating and metal plating operations as well as multiple exempt sources including abrasive blasting and maintenance operations. The facility is a source of NO<sub>x</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub>, VOCs, HAPs and TAPs.

AerSale is proposing to add one (1) paint booth (PAINT-3) to the facility and to remove an existing paint booth (PAINT-2). The new paint booth would be located indoors in a building on the existing facility. The addition of this paint booth will increase VOC and PM<sub>2.5</sub> emissions. However, PAINT-3 will be equipped with 20x20x2 inch wave filters to ensure minimal emissions are released to the atmosphere. Not only that, but the removal of PAINT-2 will cause a facility wide decrease in PM<sub>2.5</sub> emissions. As such, AerSale is requesting a waiver for PM<sub>2.5</sub>.

## Section 2 – List All Regulated Pollutants from the Entire Facility - Required

In Table 2, below, list all regulated air pollutants emitted from your facility, except for New Mexico Toxic Air Pollutants, which are listed in Table 6 of this form. All pollutants emitted from the facility must be listed whether or not a modeling waiver is requested for that pollutant or if the pollutant emission rate is subject to the proposed permit changes.

**Table 2: Air Pollutant summary table (Check all that apply. Include all pollutants emitted by the facility):**

Pollutant	Pollutant is not emitted at the facility and modeling or waiver are not required.	Pollutant does not increase in emission rate at any emission unit (based on levels currently in the permit) and stack parameters are unchanged. Modeling or waiver are not required.	Stack parameters or stack location has changed.	Pollutant is new to the permit, but already emitted at the facility.	Pollutant is increased at any emission unit (based on levels currently in the permit).	A modeling waiver is being requested for this pollutant.	Modeling for this pollutant will be included in the permit application.
CO		X					
NO <sub>2</sub>		X					
SO <sub>2</sub>	X						
PM <sub>10</sub>		X					
PM <sub>2.5</sub>						X	
H <sub>2</sub> S	X						
Reduced S	X						
O <sub>3</sub> (PSD only)	X						
Pb	X						

## Section 3: Pollutants, other than NMTAPs, with very small emission rates

The Air Quality Bureau has performed generic modeling to demonstrate that small sources, as listed in Appendix 2 of this form, do not need computer modeling. This modeling compared emissions from a project (the increase in emissions from the previous permit or total facility emissions for a new facility) with significance levels. After comparing the project's emission rates for various pollutants to Appendix 2, list in Table 3 the pollutants that do not need to be modeled because of very small emission rates.

The facility must be at least 2 km from the nearest Class I area to qualify for a waiver due to very small emission rates. List the nearest Class I area and the distance from the facility in Section 3 comments.

Section 3 Comments. (If you are not requesting a waiver for any pollutants based on their low emission rate, then note that here. You do not need to complete the rest of Section 3 or Table 3.)

The new PAINT-3 unit will have very low PM<sub>2.5</sub> emissions. Based on Appendix 2, this unit will not require modeling.

**Table 3: List of Pollutants with very small emission rates from the project**

Pollutant	Requested Allowable Emission Rate for Project (pounds/hour)	Release Type (select "all from stacks >20 m" or "other")	Waiver Threshold (from appendix 2) (lb/hr)
PM <sub>2.5</sub>	0.0000855	Other	0.009



**Section 4: Pollutants that have previously been modeled at equal or higher emission rates**

List the pollutants and averaging periods in Table 4 for which you are requesting a modeling waiver based on previous modeling for this facility. The previous modeling reports that apply to the pollutant must be submitted with the modeling waiver request. Request previous modeling reports from the Modeling Section of the Air Quality Bureau if you do not have them and believe they exist in the AQB modeling file archive.

Section 4 Comments. (If you are not asking for a waiver based on previously modeled pollutants, note that here. You do not need to complete the rest of section 4 or table 4.)

**Table 4: List of previously modeled pollutants (facility-wide emission rates)**

Pollutant	Averaging period	Proposed emission rate (pounds/hour)	Previously modeled emission rate (pounds/hour)	Proposed minus modeled emissions (lb/hr)	Modeled percent of standard or increment	Year modeled
PM <sub>2.5</sub>	24hr	0.16	0.35	-0.19	65% (NAAQS)	2019
PM <sub>2.5</sub>	24hr	0.16	0.35	-0.19	95% (PSD Class II)	2019
PM <sub>2.5</sub>	Annual	0.16	0.35	-0.19	93% (NAAQS)	2019
PM <sub>2.5</sub>	Annual	0.16	0.35	-0.19	67% (PSD Class II)	2019

**Section 4, Table 5: Questions about previous modeling:**

Question	Yes	No
Was AERMOD used to model the facility?	X	
Did previous modeling predict concentrations less than 95% of each air quality standard and PSD increment?	X	
Were all averaging periods modeled that apply to the pollutants listed above?	X	
Were all applicable startup/shutdown/maintenance scenarios modeled?	X	
Did modeling include all sources within 1000 meters of the facility fence line that now exist?	X	
Did modeling include background concentrations at least as high as current background concentrations?		X
<p>If a source is changing or being replaced, is the following equation true for all pollutants for which the waiver is requested? (Attach calculations if applicable.)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>EXISTING SOURCE</p> <math display="block">\frac{[(g) \times (h1)] + [(v1)^2/2] + [(c) \times (T1)]}{q1}</math> </div> <div style="text-align: center;"> <p>REPLACEMENT SOURCE</p> <math display="block">\frac{[(g) \times (h2)] + [(v2)^2/2] + [(c) \times (T2)]}{q2}</math> </div> </div> <p>Where</p> <p>g = gravitational constant = 32.2 ft/sec<sup>2</sup></p> <p>h1 = existing stack height, feet</p> <p>v1 = exhaust velocity, existing source, feet per second</p> <p>c = specific heat of exhaust, 0.28 BTU/lb-degree F</p> <p>T1 = absolute temperature of exhaust, existing source = degree F + 460</p> <p>q1 = emission rate, existing source, lbs/hour</p> <p>h2 = replacement stack height, feet</p> <p>v2 = exhaust velocity, replacement source, feet per second</p> <p>T2 = absolute temperature of exhaust, replacement source = degree F + 460</p> <p>q2 = emission rate, replacement source, lbs/hour</p>	X	

If you checked “no” for any of the questions, provide an explanation for why you think the previous modeling may still be used to demonstrate compliance with current ambient air quality standards.

**Previous model results included 10.8 µg/m<sup>3</sup> for PM<sub>2.5</sub> 24-hr background 98th percentile and 4.6 µg/m<sup>3</sup> for PM<sub>2.5</sub> annual background from the Albuquerque Del Norte High School monitor (350010023). Current background concentrations from the same monitor are 15.7 µg/m<sup>3</sup> for PM<sub>2.5</sub> 24-hr background 98th percentile and 5.8 µg/m<sup>3</sup> for PM<sub>2.5</sub> annual background.**

## Section 5: Modeling waiver using scaled emission rates and scaled concentrations

At times it may be possible to scale the results of modeling one pollutant and apply that to another pollutant. Increases in emissions of one pollutant might also demonstrate compliance by applying a scaling factor to the modeling results. If the analysis for the waiver gets too complicated, then it becomes a modeling review rather than a modeling waiver, and applicable modeling fees will be charged for the modeling. Plume depletion, ozone chemical reaction modeling, post-processing, and unequal pollutant ratios from different sources are likely to invalidate scaling.

If you are not scaling previous results, note that here. You do not need to complete the rest of section 5. Scaling analyses are not intended to be used for previously modeled pollutants with decreasing emissions, which is already addressed in section 4.

Current background concentrations from the Albuquerque Del Norte Monitor are higher than the last modeled background concentrations. As a result, scaling was performed to show the scaled impacts of the facility with the addition of the updated background concentrations. The results show that even with the decrease in the NAAQS annual PM<sub>2.5</sub> standard, the facility would still be in compliance with all standards. Therefore, modeling is not required for this facility.

To demonstrate compliance with standards for a pollutant describe scenarios below that you wish the modeling section to consider for scaling results.

Pollutant	Averaging period	Previously modeled emission rate (pounds/hour)	Proposed emission rate (pounds/hour)	Modeled Total Concentration (With Surrounding Sources)	Scaled Modeled Total Concentration (With Surrounding Sources)	Current Background Concentration	Total Scaled Concentration	Scaled Impact (% of Standard)
PM <sub>2.5</sub>	24hr	0.35	0.16	11.82	5.40	15.70	21.10	60.3% (NAAQS)
PM <sub>2.5</sub>	24hr	0.35	0.16	8.55	3.91	-	3.91	43.4% (PSD Class II)
PM <sub>2.5</sub>	Annual	0.35	0.16	6.61	3.02	5.80	8.82	98.0% (NAAQS)
PM <sub>2.5</sub>	Annual	0.35	0.16	2.68	1.23	-	1.23	30.6% (PSD Class II)

## Section 6: New Mexico Toxic air pollutants – 20.2.72.400 NMAC

Modeling must be provided for any New Mexico Toxic Air Pollutant (NMTAP) with a facility-wide controlled emission rate in excess of the pound per hour emission levels specified in Tables A and B at **20.2.72.502 NMAC - Toxic Air Pollutants and Emissions**. An applicant may use a stack height correction factor based on the release height of the stack for the purpose of determining whether modeling is required. See Table C - Stack Height Correction Factor at 20.2.72.502 NMAC. Divide the emission rate for each release point of a NMTAP by the correction factor for that release height and add the total values together to determine the total adjusted pound per hour emission rate for that NMTAP. If the total adjusted pound per hour emission rate is lower than the emission rate screening level found in Tables A and B, then modeling is not required.

In Table 6, below, list the total facility-wide emission rates for each New Mexico Toxic Air Pollutant emitted by the facility. The table is pre-populated with common examples. Extra rows may be added for NMTAPS not listed or for NMTAPS emitted from multiple stack heights. NMTAPS not emitted at the facility may be deleted, left blank, or noted as 0 emission rate. Toxics previously modeled may be addressed in Section 5 of this waiver form. For convenience, we have listed the stack height correction factors in Appendix 1 of this form.

Section 6 Comments. (If you are not requesting a waiver for any NMTAPs then note that here. You do not need to complete the rest of section 6 or Table 6.)

**Table 6: New Mexico Toxic Air Pollutants emitted at the facility**

If requesting a waiver for any NMTAP, all NMTAPs from this facility must be listed in Table 3 regardless of if a modeling waiver is requested for that pollutant or if the pollutant emission rate is subject to the proposed permit changes.

Pollutant	Requested Allowable Emission Rate (pounds/hour)	Release Height (Meters)	Correction Factor	Allowable Emission Rate Divided by Correction Factor	Emission Rate Screening Level (pounds/hour)
n-Butyl Acetate	5.79	<10	1	5.79	43.3
Antimony	0.0049	<10	1	0.0049	0.0333
Nickel	0.049	<10	1	0.049	0.0667
Methyl Amyl Ketone	4.81	<10	1	4.81	15.7
Cyclohexanone	0.89	<10	1	0.89	6.67
Heptan-2-one	2.64	<10	1	2.64	15.7
Solvent Naphtha	1.90	<10	1	1.90	90.0
Carbon Black	0.0032	<10	1	0.0032	0.233
Ethyl Acetate	1.29	<10	1	1.29	93.3
2-Butoxyethanol	0.81	<10	1	0.81	8.00
4-hydroxy-4-methylpentan-2-one	0.98	<10	1	0.98	16.0
Aluminum Metal	0.011	<10	1	0.011	0.667
Cadmium Metal	0.000070	<10	1	0.000070	0.00333
Chromium Metal	0.0046	<10	1	0.0046	0.0333
Nitric Acid	0.021	<10	1	0.021	0.333
Pentan-2-one	0.20	<10	1	0.20	46.7

#### Section 7: Approval or Disapproval of Modeling Waiver

The AQB air dispersion modeler should list each pollutant for which the modeling waiver is approved, the reasons why, and any other relevant information. If not approved, this area may be used to document that decision.

**The project's PM<sub>2.5</sub> emissions from paint booth swap will be less than the minimum emission threshold in Appendix 2.**

**Appendix 1: Stack Height Release Correction Factor (adapted from 20.2.72.502 NMAC)**

Release Height in Meters	Correction Factor
0 to 9.9	1
10 to 19.9	5
20 to 29.9	19
30 to 39.9	41
40 to 49.9	71
50 to 59.9	108
60 to 69.9	152
70 to 79.9	202
80 to 89.9	255
90 to 99.9	317
100 to 109.9	378
110 to 119.9	451
120 to 129.9	533
130 to 139.9	617
140 to 149.9	690
150 to 159.9	781
160 to 169.9	837
170 to 179.9	902
180 to 189.9	1002
190 to 199.9	1066
200 or greater	1161

**Appendix 2. Very small emission rate modeling waiver requirements (updated 3/4/2024 to correct feet to meters)**

Modeling is waived if emissions of a pollutant for the project are below the amount:

Pollutant	If all emissions come from stacks 20 meters or greater in height and there are no horizontal stacks or raincaps (lb/hr)	If not all emissions come from stacks 20 meters or greater in height, or there are horizontal stacks, raincaps, volume, or area sources (lb/hr)
CO	16.037	2.580
H <sub>2</sub> S (Pecos-Permian Basin)	0.114	0.015
H <sub>2</sub> S (Not in Pecos-Permian Basin)	0.022	0.003
Lead	0.005	0.001
NO <sub>2</sub>	0.189	0.024
PM2.5 – Point Sources	0.056	0.009
PM2.5 – Volume Sources		0.003
PM10 – Point Sources	0.255	0.039
PM10 – Volume Sources		0.015
SO <sub>2</sub>	0.179	0.023
Reduced sulfur (Pecos-Permian Basin)	0.033	No waiver
Reduced sulfur (Not in Pecos-Permian Basin)	No waiver	No waiver

## Daniel Dolce

---

**From:** Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>  
**Sent:** Wednesday, August 14, 2024 3:00 PM  
**To:** Daniel Dolce  
**Subject:** RE: [EXTERNAL] Modeling Waiver for AerSale Inc. - AerSale Component Solutions facility: NSR 8941  
**Attachments:** 8941\_AerSale Component Solutions\_Modeling Waiver\_08142024.pdf

Daniel

Please find in attachment a copy of the approved Modeling Waiver request.  
Thank you.

Sufi A. Mustafa, Ph.D.  
Manager Air Dispersion Modeling and Emission Inventory Section  
New Mexico Environment Department's Air Quality Bureau  
Office: (505) 629 6186  
[sufi.mustafa@state.nm.us](mailto:sufi.mustafa@state.nm.us)  
525 Camino de los Marquez  
Suite 1  
Santa Fe, New Mexico, 87505  
<https://www.env.nm.gov/air-quality/>



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---

**From:** Daniel Dolce <Daniel.Dolce@trinityconsultants.com>  
**Sent:** Wednesday, August 14, 2024 10:44 AM  
**To:** Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>  
**Subject:** RE: [EXTERNAL] Modeling Waiver for AerSale Inc. - AerSale Component Solutions facility: NSR 8941

Hi Sufi,

Please find attached the word document of the modeling waiver request for AerSale.

Thank you and regards,  
Daniel Dolce

---

**Daniel Dolce**  
Consultant

P 505.266.6611, Ext. 3208 M 505.818.8761  
Email: [Daniel.Dolce@trinityconsultants.com](mailto:Daniel.Dolce@trinityconsultants.com)  
9400 Holly Avenue NE, Building 3, Suite B, Albuquerque, NM 87122

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---

**From:** Mustafa, Sufi A., ENV <[sufi.mustafa@env.nm.gov](mailto:sufi.mustafa@env.nm.gov)>

**Sent:** Wednesday, August 14, 2024 10:43 AM

**To:** Daniel Dolce <[Daniel.Dolce@trinityconsultants.com](mailto:Daniel.Dolce@trinityconsultants.com)>

**Subject:** RE: [EXTERNAL] Modeling Waiver for AerSale Inc. - AerSale Component Solutions facility: NSR 8941

Daniel

Your request present PM2.5 project emissions below the PM2.5 modeling waiver threshold. Please send me MS Word version of this waiver request and I will send you back a copy of an approved request.

Thank you.

Sufi A. Mustafa, Ph.D.

Manager Air Dispersion Modeling and Emission Inventory Section

New Mexico Environment Department's Air Quality Bureau

Office: (505) 629 6186

[sufi.mustafa@state.nm.us](mailto:sufi.mustafa@state.nm.us)

525 Camino de los Marquez

Suite 1

Santa Fe, New Mexico, 87505

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**From:** Daniel Dolce <[Daniel.Dolce@trinityconsultants.com](mailto:Daniel.Dolce@trinityconsultants.com)>

**Sent:** Thursday, August 8, 2024 1:16 PM

**To:** Mustafa, Sufi A., ENV <[sufi.mustafa@env.nm.gov](mailto:sufi.mustafa@env.nm.gov)>

**Cc:** Adam Erenstein <[AErenstein@trinityconsultants.com](mailto:AErenstein@trinityconsultants.com)>

**Subject:** RE: [EXTERNAL] Modeling Waiver for AerSale Inc. - AerSale Component Solutions facility: NSR 8941

Hi Sufi,

The new PAINT-3 unit will have an emission rate of 8.55E-05 lb/hr PM<sub>2.5</sub>. According to Appendix 2, the very small emission rate modeling waiver requirement for PM<sub>2.5</sub> – Point Sources "Other" is 0.009. Therefore, the unit would not need to be modeled (This unit is not an exempt unit as it still has ~7 lb/hr VOCs). This unit has been added to Table 3 of the Modeling Waiver.

Thank you and regards,  
Daniel Dolce

---

**Daniel Dolce**  
Consultant

P 505.266.6611, Ext. 3208 M 505.818.8761

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**From:** Mustafa, Sufi A., ENV <[sufi.mustafa@env.nm.gov](mailto:sufi.mustafa@env.nm.gov)>  
**Sent:** Tuesday, August 6, 2024 5:10 PM  
**To:** Daniel Dolce <[Daniel.Dolce@trinityconsultants.com](mailto:Daniel.Dolce@trinityconsultants.com)>  
**Subject:** RE: [EXTERNAL] Modeling Waiver for AerSale Inc. - AerSale Component Solutions facility: NSR 8941

Daniel

Is this the same vent that the retiring paint booth used?

If it is not, then you will have a new emission point for the new booth. The new emission point will have different emission parameters, location and building downwash, therefore, modeling analyses will be needed in that case. If the paint booth emissions are going to be exempt in NSR permit then you do not need to model the new booth.

Sufi A. Mustafa, Ph.D.  
Manager Air Dispersion Modeling and Emission Inventory Section  
New Mexico Environment Department's Air Quality Bureau  
Office: (505) 629 6186  
[sufi.mustafa@state.nm.us](mailto:sufi.mustafa@state.nm.us)  
525 Camino de los Marquez  
Suite 1  
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<https://www.env.nm.gov/air-quality/>



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---

**From:** Daniel Dolce <[Daniel.Dolce@trinityconsultants.com](mailto:Daniel.Dolce@trinityconsultants.com)>  
**Sent:** Monday, August 5, 2024 10:11 AM  
**To:** Mustafa, Sufi A., ENV <[sufi.mustafa@env.nm.gov](mailto:sufi.mustafa@env.nm.gov)>  
**Subject:** RE: [EXTERNAL] Modeling Waiver for AerSale Inc. - AerSale Component Solutions facility: NSR 8941

Hi Sufi,

The paint booths vent to the atmosphere through building stack vents. The stack vents themselves have HEPA filters to reduce PM emissions

Thank you and regards,  
Daniel Dolce

**Daniel Dolce**  
Consultant

P 505.266.6611, Ext. 3208 M 505.818.8761  
Email: [Daniel.Dolce@trinityconsultants.com](mailto:Daniel.Dolce@trinityconsultants.com)  
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---

**From:** Mustafa, Sufi A., ENV <[sufi.mustafa@env.nm.gov](mailto:sufi.mustafa@env.nm.gov)>  
**Sent:** Friday, August 2, 2024 4:44 PM  
**To:** Daniel Dolce <[Daniel.Dolce@trinityconsultants.com](mailto:Daniel.Dolce@trinityconsultants.com)>  
**Subject:** RE: [EXTERNAL] Modeling Waiver for AerSale Inc. - AerSale Component Solutions facility: NSR 8941

Daniel

I am not clear how are the emissions from this paint both will go to the atmosphere. Please let me know.  
Thank you.

Sufi A. Mustafa, Ph.D.  
Manager Air Dispersion Modeling and Emission Inventory Section  
New Mexico Environment Department's Air Quality Bureau  
Office: (505) 629 6186  
[sufi.mustafa@state.nm.us](mailto:sufi.mustafa@state.nm.us)  
525 Camino de los Marquez  
Suite 1  
Santa Fe, New Mexico, 87505  
<https://www.env.nm.gov/air-quality/>



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---

**From:** Daniel Dolce <[Daniel.Dolce@trinityconsultants.com](mailto:Daniel.Dolce@trinityconsultants.com)>  
**Sent:** Monday, July 15, 2024 10:55 AM  
**To:** Mustafa, Sufi A., ENV <[sufi.mustafa@env.nm.gov](mailto:sufi.mustafa@env.nm.gov)>  
**Cc:** Adam Erenstein <[AErenstein@trinityconsultants.com](mailto:AErenstein@trinityconsultants.com)>; Johnny Nguyen <[Johnny.Nguyen@trinityconsultants.com](mailto:Johnny.Nguyen@trinityconsultants.com)>  
**Subject:** [EXTERNAL] Modeling Waiver for AerSale Inc. - AerSale Component Solutions facility: NSR 8941

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Hi Sufi,



Please find attached a modeling waiver for the AerSale Component Solutions facility (**NSR 8941**) owned and operated by AerSale Inc. This modeling waiver is being submitted as part of a significant revision to the permit which involves the addition on a small new paint booth (PAINT-3) and the removal of a larger paint booth (PAINT-2). These modifications result in lower emissions for all criteria pollutants from the previous permit and model.

Please let me know if you have any questions, comments, or concerns.

Thank you and regards,  
Daniel Dolce

---

**Daniel Dolce**  
Consultant

P 505.266.6611, Ext. 3208 M 505.818.8761

Email: [Daniel.Dolce@trinityconsultants.com](mailto:Daniel.Dolce@trinityconsultants.com)

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# Section 17

## Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

To show compliance with existing NSR permits conditions, you must submit a compliance test history. The table below provides an example.

Compliance Test History Table

Unit No.	Test Description	Test Date
FILTER-1	Initial Compliance Test: EPA Method 201	TBD
FILTER-2	Initial Compliance Test: EPA Method 201	TBD
FILTER-3	Initial Compliance Test: EPA Method 201	TBD

# Section 20

## Other Relevant Information

---

**Other relevant information.** Use this attachment to clarify any part in the application that you think needs explaining. Reference the section, table, column, and/or field. Include any additional text, tables, calculations or clarifying information.

Additionally, the applicant may propose specific permit language for AQB consideration. In the case of a revision to an existing permit, the applicant should provide the old language and the new language in track changes format to highlight the proposed changes. If proposing language for a new facility or language for a new unit, submit the proposed operating condition(s), along with the associated monitoring, recordkeeping, and reporting conditions. In either case, please limit the proposed language to the affected portion of the permit.

---

There is no other information needed for this application.

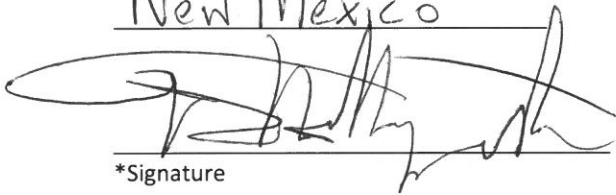
## Section 22: Certification

Company Name: Aersale Landing Gear Solutions

I, Tim Hollingsworth, hereby certify that the information and data submitted in this application are true and as accurate as possible, to the best of my knowledge and professional expertise and experience.

x Signed this 10 day of October, 2024 upon my oath or affirmation, before a notary of the State of

New Mexico

  
\*Signature

x 10/10/24  
Date

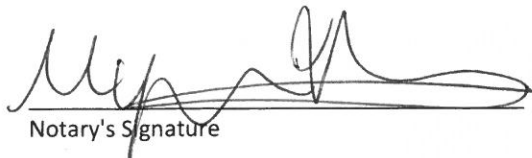
x Tim Hollingsworth  
Printed Name

x GM  
Title

Scribed and sworn before me on this 10 day of October, 2024.

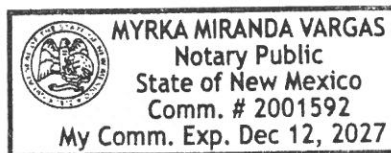
My authorization as a notary of the State of New Mexico expires on the

12<sup>TH</sup> day of December, 2027.

  
Notary's Signature

10/10/2024  
Date

MYRKA MIRANDA VARGAS  
Notary's Printed Name



\*For Title V applications, the signature must be of the Responsible Official as defined in 20.2.70.7.AE NMAC.