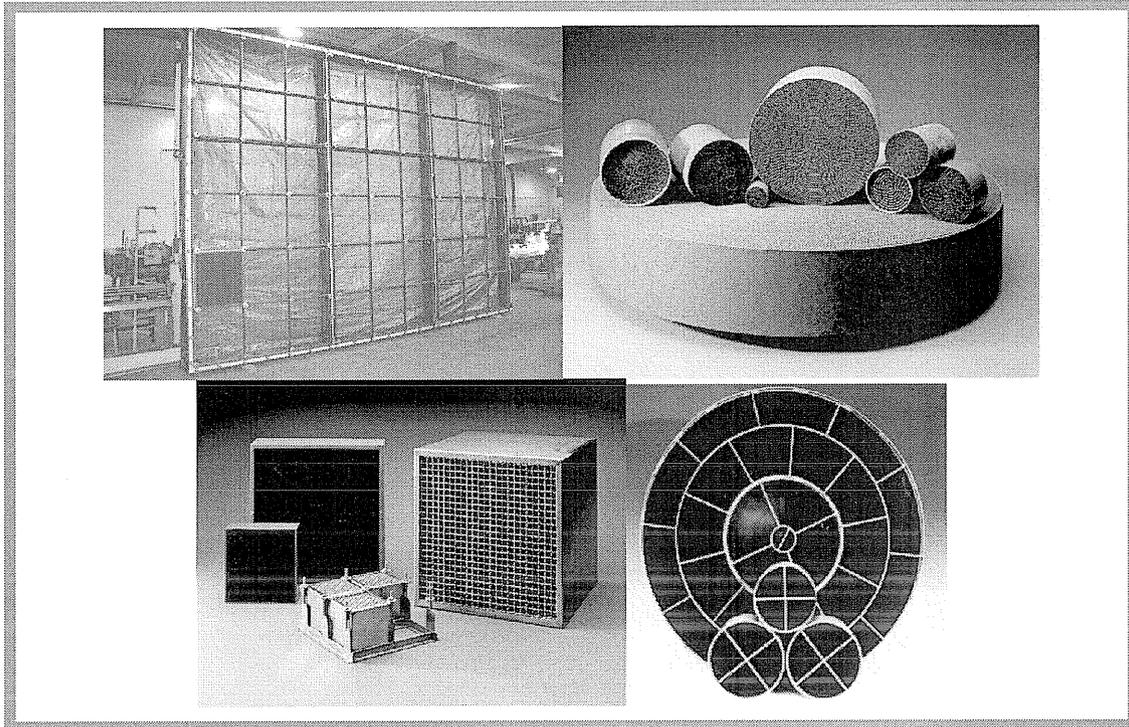


Enclosure 2
Manufacturers Data on Catalyst

CATALYTIC PRODUCTS INTERNATIONAL

METAC® CATALYST PRODUCTS



Catalytic Products International, Inc. designs and manufactures custom catalyst and catalyst retrofit systems for VOC, CO, and NO_x from a variety of industrial and generating industries. Our unique monolith structures create low back pressure and offer high geometric surface areas, both necessary for high performance and low operating costs.

The modular designs offered in the METAC Catalyst Products Group allow CPI to customize the size and configuration of the catalyst for the specific needs of your application. Not every application is identical. Pressure requirements, particulate size, solvent types, concentrations, performance requirements, installation requirements all come into design consideration. CPI offers over 100 different catalyst options to match the specific needs of your application.

The right chemistry forms the building blocks for an efficient catalyst. At CPI, our engineers have developed and refined our METAC Catalyst Products to offer a highly dispersed, finely divided precious metal particle distribution over customized structures offering enormous surface areas. The combined efforts of particle distribution and maximized surface area afford low operating temperatures, thermally stable operations, and long life.

Catalytic Products International, Inc. is a 40 year old manufacture of catalyst products, fume oxidation systems, heat recovery systems, energy conservation, maintenance and repair service, engineering service. A partial list of METAC Catalyst Products users include; nuclear power generation, turbine and boiler emission control, metal decorating, printing, food processing, semiconductor, chemical processing, petrochemical processing, gen-set emission control, among many others...

Please contact us for more information about our expertise in
cost effective abatement of VOC, CO, and NO_x

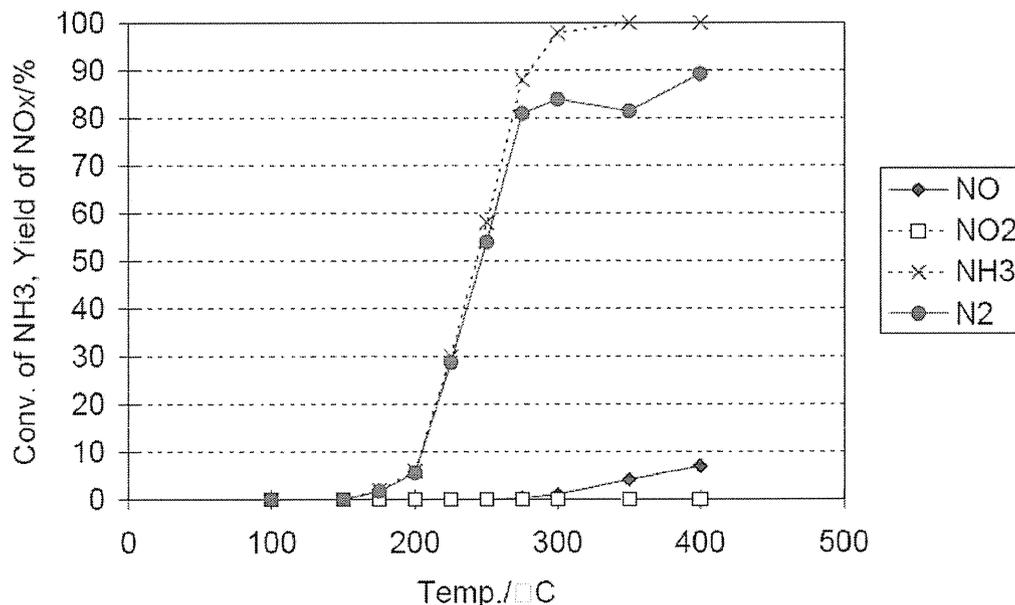
Catalysts, Thermal Oxidizers, Regenerative Thermal Oxidizer's, Catalytic Oxidizer's, Heat Recovery System's, Energy Conservation, Repair and Retrofit Services, Maintenance Services, Engineering

AMMONIA REMOVAL CATALYST

Typical Chemical and Physical Properties

Catalyst Name	Ammonia Removal Catalyst Envicat 2060
Catalyst Form	230 cpsi Ceramic Honeycomb Monolith Unit Blocks: 5.91" x 5.91" x 3" 12 unit blocks per module
Description	Catalyst used for CO, VOC, and selective NH ₃ reduction. Cordierite ceramic monolith substrate with V ₂ O ₅ and Alumina wash coat and Platinum Group Metals
Containment	304 stainless steel housing with removable lid. Ceramic blanket surrounding the unit blocks. Module: 12-1/2 x 12-1/2 x 9-1/2
Physical Properties	Washcoat surface area: > 80 m ² /g Bulk Density: 36 lbs/ft ³ Module Weight: 30 lbs
Application	Design Maximum Air Volume: 7,500 scfm Design Temperature: 450 – 650 F Ideal Temperature: 570 F (estimate) Volume Installed: 22.5 cf Space Velocity Installed: 20,000 hr ⁻¹ Number of Modules Installed: 30

Fig. Oxidation of NH₃ over Precious Metal Catalyst (honeycomb)
SV=20000h⁻¹, NH₃(5000ppm), Air balance, H₂O(5%)



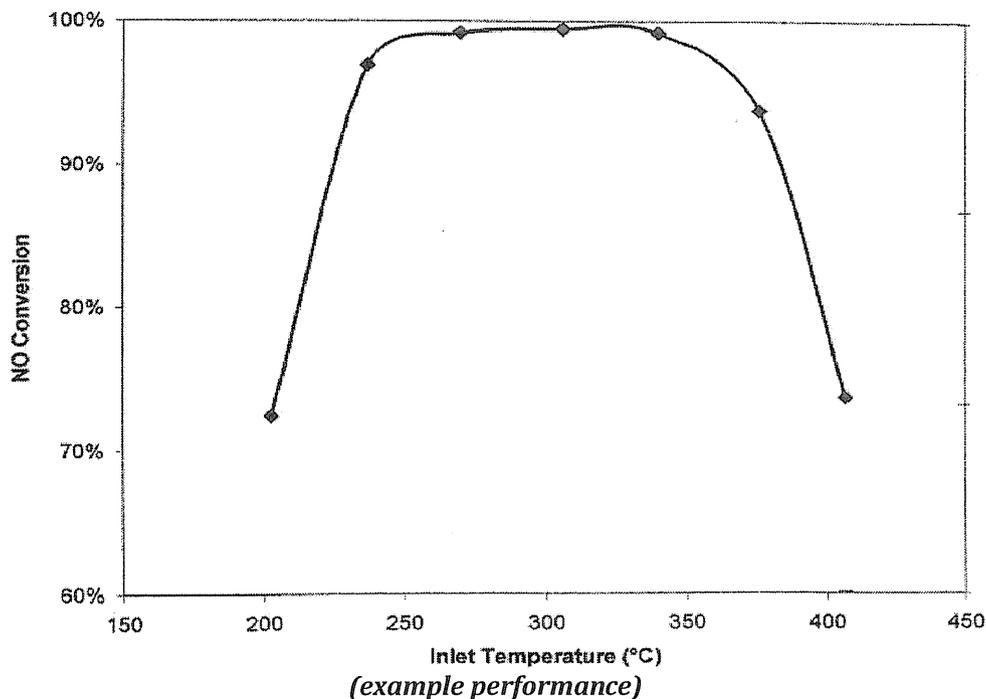
(example performance)

NOX REMOVAL CATALYST

Typical Chemical and Physical Properties

Catalyst Name	NOx Removal Catalyst Envicat SCR
Catalyst Form	230 cpsi Ceramic Honeycomb Monolith Unit Blocks: 5.91" x 5.91" x 3" 16 unit blocks per module
Description	Catalyst used for selective NO and NO2 reduction using NH3 as reactant Cordierite ceramic monolith substrate with Titania wash coat and V2O5 coating
Containment	304 stainless steel housing with removable lid. Ceramic blanket surrounding the unit blocks. Module: 12-1/2 x 12-1/2 x 12-1/2
Physical Properties	Washcoat surface area: > 80 m2/g Bulk Density: 36 lbs/ft3 Module Weight: 40 lbs
Application	Design Maximum Air Volume: 7,500 scfm Design Temperature: 450 – 650 F Ideal Temperature: 575 F (estimate) Volume Installed: 30 cf Space Velocity Installed: 15,000 hr-1 Number of Modules Installed: 30

NO conversion over NOx Removal Catalyst
SV = 15,000 h-1, NO = 1,000 ppmv, NH3 reactant = 1,000 ppmv



GUARD BED

Typical Chemical and Physical Properties

Catalyst Name	Guard Bed
Catalyst Form	300 cpsi Ceramic Honeycomb Monolith Unit Blocks: 5.91" x 5.91" x 1.5" 4 unit blocks per module
Description	Guard Bed used to provide a sacrificial layer located before active catalyst layers. Cordierite ceramic monolith substrate with Alumina wash coat
Containment	304 stainless steel housing with removable lid. Ceramic gasket surrounding the unit blocks. Module: 12-1/2 x 12-1/2 x 2
Physical Properties	Washcoat surface area: > 180 m ² /g Bulk Density: 36 lbs/ft ³ Module Weight: 10 lbs
Application	Design Maximum Air Volume: 7,500 scfm Design Temperature: < 1,100 F Volume Installed: 3.75 cf Number of Modules Installed: 30



CATALYST TESTING SERVICES

Catalytic Products International, Inc provides routine testing services. The life expectancy of the catalyst systems quoted is 3-5 years and routinely has shown exemplary performance past 7 years.

CPI suggests that at least annual catalyst testing services be conducted. The testing services that CPI offers is detailed below:

Catalyst coupons will be extracted from one of the catalyst modules. (or install a spare module for testing) Unless specifically requested, CPI will initially perform the standard activity test (item 1). Should results of this test provide questionable results, CPI will notify with suggestions for follow-up tests (items 2-4, at stated rates)

Item No	Description	Unit Price
1	Custom Activity Test: Activity test that compares the activity of your sample to that of similar new catalyst. A table of results and graphic chart showing removal efficiency for standard gas samples of ammonia and NO/NO ₂ .	[REDACTED]
2	X-Ray Fluorescence: Used after the activity test shows less than expected results and in instances when poisoning is thought to have occurred. This will specify what contaminants may be found on the surface of the sample	[REDACTED]
3	BET Surface Area: Used after the activity test shows less than expected results and in instances when high temperatures are thought to have damaged the catalyst.	[REDACTED]
4	Precious Metal Analysis: Used after the activity test shows less than expected results and in instances when particulate attack or loss due to attrition is thought to have occurred.	[REDACTED]