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Product
Data Sheet

VOCat™ 450M

Low Temperature PTA Oxidation Catalyst

Catalysts are broadly used for the oxidation of volatile organic compounds (VOC's). As a world-leading supplier of catalysts for a wide range of applications, BASF has catalyst development technology expertise which can produce catalysts engineered to optimize performance for specific application requirements. Processes for manufacturing purified terephthalic acid (PTA) produce exhaust gas with specific requirements. Most significantly, because of the large flow rates, lower catalyst operating temperatures will reduce operation costs associated with control of VOC's from PTA processes. Secondly, a highly active catalyst which selectively does not convert methybromide (MeBr) to bromo-benzene compounds has operational benefits for PTA production processes.

High Activity and Energy Savings

VOCat 450 is a highly active catalyst which results with both lower operating temperatures and less catalyst volume requirements. This is illustrated by comparing the operating temperature for VOCat 450 (Chart 1) to a traditional high activity catalyst VOCat (Chart 2). This lower operating temperature will significantly reduce energy consumption of the VOC control process shown in Chart 3.

Selectivity

The formation of secondary products, such as bromobenzenes, are not desirable when using oxidation catalysts for VOC control in PTA processes. VOCat 450 is a highly selective catalyst, that when operated according to the defined parameters, will give complete oxidation.

Chart 1:
VOCat 450 achieves 98% CO/VOC conversion at 280°C

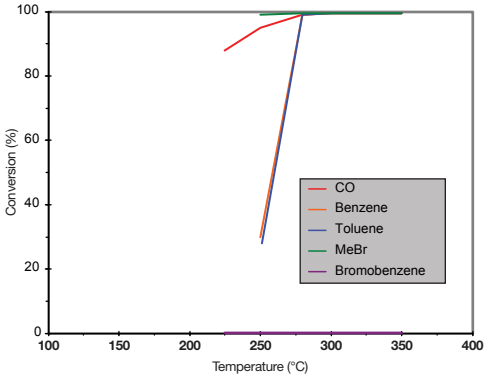


Chart 2:
VOCat 300H achieves 98% CO/VOC conversion at 375°C

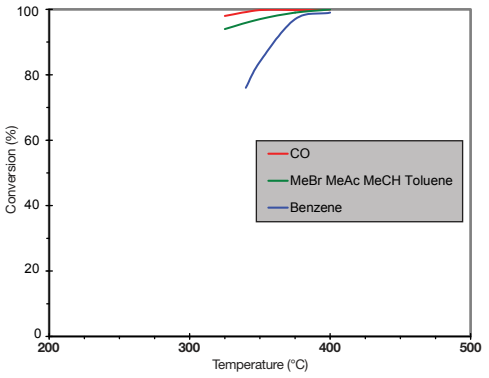
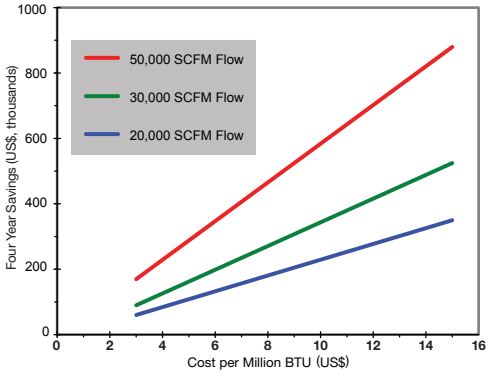


Chart 3:
Effect of Lower Oxidation Temperature on Energy Consumption cost with a 75°C reduction



Guidelines for PTA Oxidation Catalyst Selection

- High temperature application for controlling VOC/CO/MeBr
  - VOCat 300H
- Low temperature application for controlling VOC/CO/MeBr
  - VOCat 450H
  - VOCat 450M
  - VOCat 500H
- Low temperature application for controlling VOC/CO
  - VOCat PTA
  - VOCat PTA LT (Low MeBr Conversion)

Catalyst Features

The catalysts are supported on ceramic substrates and feature:

- Excellent adhesion of catalyst coating to the substrate
- High temperature stability and thermal shock resistance
- Low pressure drop
- High strength and excellent durability

Typical Operation Specification

- Temperature range
  - 160°C to 600°C
- Cell geometry
  - 100 to 400 cpsi
- Performance
  - Up to 99+ %

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About Us

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