

VOCat™ 350HC

Oxidation catalyst for chlorinated hydrocarbons

VOCat 350 HC catalyst provides high activity, excellent selectivity and outstanding stability required for oxidizing chlorinated hydrocarbons.

Chlorinated hydrocarbons are emitted from a wide variety of industrial processes, as well as many soil remediation and ground water clean-up operations. Most conventional catalysts used to oxidize volatile organic compounds (VOCs) have proven inadequate for dealing with chlorinated compounds because they cannot provide the full combination of activity, selectivity and stability needed for these hard-to-oxidize emissions.

Activity

Compared to platinum or transition metal-based catalysts, VOCat 350 HC catalyst shows significantly higher activity. This reduces temperature requirements and can allow fuel savings (Chart 1).

The high activity of VOCat 350 HC catalyst is exhibited over a wide range of chlorinated species making this a versatile catalyst ideal for most situations. The activity increases when going from aliphatic to aromatic chloro compounds and in going from C2 to C1 species (Chart 2).

Selectivity

Selectivity is critical when dealing with chlorinated compounds. VOCat 350 HC catalyst will form predominantly CO₂ and HCl when 1.5% or more water is present in the feed stream.

The formation of HCl is preferred over Cl₂ because it is easy to scrub and has minimal effect on catalyst life.

Stability

Aging studies over a period of 1200 hours show that VOCat 350 HC catalyst maintains high activity with no measurable decline. This catalyst effectively operates at temperatures 75° C higher than other catalysts designed for chlorinated hydrocarbon destruction. This high temperature stability makes VOCat 350 HC catalyst suitable for the most demanding applications (Chart 3).

Features and Benefits

The BASF 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 & excellent durability
- Compact design

Typical Operation Specs

- Temperature range: 225°C to 475°C
- Cell Geometry: 100 to 400 cell/in²
- Activity: up to 99% oxidation

About Us

BASF's Catalysts division is the world's leading supplier of environmental and process catalysts. The group offers exceptional expertise in the development of technologies that protect the air we breathe, produce the fuels that power our world and ensure efficient production of a wide variety of chemicals, plastics and other products, including advanced battery materials. By leveraging our industry-leading R&D platforms, passion for innovation and deep knowledge of precious and base metals, BASF's Catalysts division develops unique, proprietary solutions that drive customer success.

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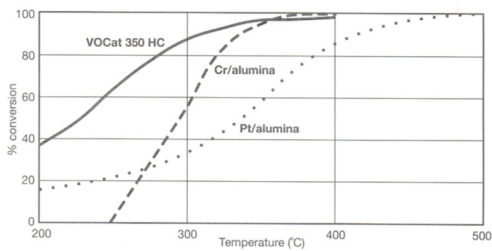
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Chart 1:
Destruction of
Trichloroethylene

1000 ppm TCE,
1.5% water,
7500 VHSV
For comparison purposes
powder catalysts
were used.



VOCat™ 350 HC OXIDATION CATALYST

Chart 2:
Destruction of
Chlorocarbons
with VOCat 350 HC
Catalyst

1000 ppm TCE,
1.5% water,
7500 VHSV

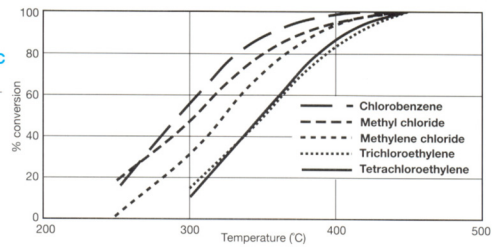
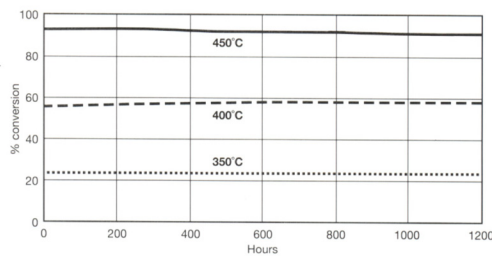


Chart 3:
Stability of VOCat
350 HC Catalyst

1000 ppm TCE,
1.5% water,
7500 VHSV, 450°C



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