CLEANOx®

Environmental Fluid Catalytic Cracking (FCC) additive for reduced NO\textsubscript{x} emissions

BASF’s premier FCC additive for NO\textsubscript{x} emission reduction, CLEANOx, helps refiners meet the ever-tightening air quality limits on FCC regenerator off-gas emissions

**Premium Technology**

CLEANOx uses a novel combination of active materials for NO\textsubscript{x} adsorption and reduction removing NO\textsubscript{x} and converting it to nitrogen. This process takes place in the FCC regenerator and reduces the NO\textsubscript{x} content of its off-gas by up to 80% with minimal effect on yields. CLEANOx is effective in conjunction with both platinum and non-platinum CO promoters. Its stability allows for continued NO\textsubscript{x} reduction even after additive additions have ceased.

**Maximum Results by Design**

BASF developed CLEANOx using knowledge derived from its automotive catalyst business. This knowledge of materials and NO\textsubscript{x} chemistry is the result of many years of research and development. The design and manufacture of CLEANOx provides the chemical and physical stability required for a long half-life combined with effective NO\textsubscript{x} reduction.

**Combining the Benefits**

The combination of CLEANOx with BASF’s low NO\textsubscript{x} promoters will result in the lowest achievable NO\textsubscript{x} emissions. This lower NO\textsubscript{x} production results from CO oxidation by the palladium-based promoter and the direct reduction of NO\textsubscript{x} by CLEANOx.

**Packaging**

- 55 gallon drums
- 1 ton super sacks
- 1 ton tote bins

**Typical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density, ABD, g cm\textsuperscript{-3}</td>
<td>1.1</td>
</tr>
<tr>
<td>Particle size, APS, µm</td>
<td>75</td>
</tr>
<tr>
<td>0-40, %</td>
<td>8</td>
</tr>
</tbody>
</table>
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.

BASF - We create chemistry