



The Chemical Company

## Product Data Sheet

# Endurance<sup>®</sup>

## Fluid Catalytic Cracking (FCC) catalyst for moderate resid applications

BASF Catalysts proudly introduces Endurance, an FCC catalyst designed for moderate resid feed applications.

### Technology

Based on our award-winning and commercially proven Distributed Matrix Structures (DMS) technology platform, Endurance is designed to provide enhanced diffusion of resid feed molecules to pre-cracking sites that are located on the external, exposed surface of highly dispersed zeolite crystals. The feed pre-cracks on the zeolite itself, rather than on an active amorphous matrix material. This provides improved reaction selectivities and minimizes the secondary diffusion reactions to less valuable products.

The optimized porosity of the DMS technology provides reduced mass transfer limitations in FCC unit operation, leading to more effective zeolite utilization, and less overcracking to coke and gas. This allows high bottoms conversion with low coke, and higher yields of valued gasoline and light olefin products.

Endurance also incorporates BASF Catalysts' MaxiMet technology. Designed to improve the passivation of contaminant metals over previous resid technologies, MaxiMet minimizes non-selective secondary reactions that result in increased coke and dry gas formation.

### Applications

Endurance is ideal for operations that process moderate or hydrotreated residual feedstocks with total catalyst metals levels exceeding 3000 ppm (nickel plus vanadium). Endurance provides the following benefits:

- Helps relieve air blower and wet gas limitations to improve unit profitability
- Achieves higher catalyst activity in circulation limited units to improve economic performance
- Improves liquid yields achieved with coke and gas selectivity improvements

#### Typical Properties\*

##### Chemical Composition

Al <sub>2</sub> O <sub>3</sub> , wt. %	37–43
Na <sub>2</sub> O, wt. %	0.25–0.39
Surface area m <sup>2</sup> /g	200–310

##### Density

ABD, g/cm <sup>3</sup>	0.72–0.89
------------------------	-----------

##### Particle Size

APS, μm	75
0–40, %	12

\* Properties can be customized to individual refiners' needs. These are the typical ranges that can be achieved.

## About BASF

BASF Catalysts is the Global Leader in Catalysis, and is part of BASF - The Chemical Company. By leveraging our industry-leading R&D platforms, BASF's global research infrastructure and our passionate pursuit of innovation, we develop unique, proprietary technologies that drive customer success. Our catalytic solutions cover a wide range from chemical and refinery processes, to adsorbents and mobile emissions. In addition, we offer broad experience in trading base and precious metals.

### BASF - The Chemical Company

#### BASF Catalysts Headquarters

BASF Catalysts LLC  
25 Middlesex/Essex Turnpike  
P.O. Box 770  
Iselin, NJ 08830-0770  
Tel: +1-732-205-7188  
Fax: +1-732-205-7725  
Email: [refining-catalysts@basf.com](mailto:refining-catalysts@basf.com)

#### Asia Sales Office

BASF South East Asia Pte Ltd  
7 Temasek Boulevard  
#35-01 Suntec Tower One  
Singapore 038987  
Tel: +65-6337-0330  
Fax: +65-6398-5104  
Email: [refining-catalysts@basf.com](mailto:refining-catalysts@basf.com)

#### Europe, Middle East, Africa Sales Office

BASF plc  
Earl Road, Cheadle Hulme  
P.O. Box 4  
Cheadle, CHESHIRE, SK8 6QG, UK  
Tel: +44-(0)-161-488-5156  
Fax: +44-(0)-161-485-5487  
Email: [refining-catalysts@basf.com](mailto:refining-catalysts@basf.com)

For more information, contact the BASF Catalysts office in your region or visit

[www.catalysts.basf.com/refining](http://www.catalysts.basf.com/refining)

Endurance is a trademark of BASF.

Although all statements and information in this publication are believed to be accurate and reliable, they are presented gratis and for guidance only, and risks and liability for results obtained by use of the products or application of the suggestions described are assumed by the user. NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH. Statements or suggestions concerning possible use of the products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that toxicity data and safety measures are indicated or that other measures may not be required. © 2008 BASF Catalysts