

# HDXtra®

## Refiner successfully trials catalyst for increasing Light Cycle Oil (LCO) yields

HDXtra® is a premium resid FCC catalyst based on the Prox-SMZ (Proximal Stable Matrix and Zeolite) technology that offers high matrix activity with enhanced coke selectivity to help refiners meet the growing need for diesel fuel

### Introduction

A refinery wants to improve LCO yield from its FCC unit in response to the growing global demand for distillate fuels. The refiner looks to achieve this while minimizing slurry yield and enhancing coke selectivity.

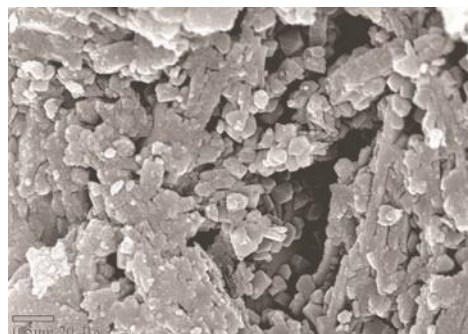
HDXtra is chosen for its ability to maintain the unit's gasoline octane production while increasing LCO yields at a low temperature (970°F). This would allow the refiner to take advantage of LCO economic opportunities.

### Results

Upon switching to HDXtra, the refiner achieved:

- Substantially higher LCO yield: 3.3 vol% increase or over 20% on a relative basis
- Almost equal slurry yield
- Lower fresh catalyst additions
- Equal gasoline octane
- Improved LCO Cetane Index by 3
- Better matrix activity retention

Figure 1. Prox-SMZ places matrix and zeolite in close proximity for controlled cracking of products from matrix upgrading



### Positive Yield Shifts with BASF HDXtra

	Before	After
Feed Concarbon, wt%	0.4	1.2
Feed Rate, bpd	Base	Base
Catalyst Additions	Base	970
Total C3 + C4, vol%	Base	>15% decrease
Gasoline, vol%	Base	-1.2
LCO, vol%	Base	+3.3
Bottoms, vol%	Base	-3.3
Fluidized Activity, wt%	67	+0.4
Ecat Metals Ni & V, ppm	220 & 840	260 & 1320

## 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**

### Americas

BASF Corporation  
25 Middlesex/Essex Turnpike  
Iselin, New Jersey, 08830, USA

### Asia Pacific

BASF South East Asia Pte Ltd  
7 Temasek Boulevard  
#35-01 Suntec Tower One  
Singapore 038987

### Europe, Middle East, Africa

BASF SE  
67056 Ludwigshafen, Germany

### Global Email

[refining-catalysts@basf.com](mailto:refining-catalysts@basf.com)

*HDXtra 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. © 2015 BASF

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

BF-9283 Rev. 04/21