

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.

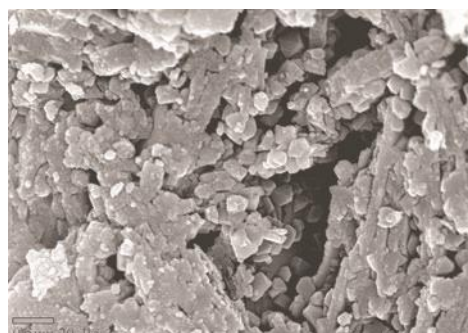
HDXtra is chosen for its ability to maintain the unit's gasoline octane production while increasing LCO yields at a low temperature (970°F). This would allow the refiner to take advantage of LCO economic opportunities.

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

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BF-9283 Rev. 06/18