

## Performance Profile

# Stamina™

## Refinery trial of new BASF distillate maximization catalyst shows superior bottoms upgrading and outstanding stability in the presence of high levels of contaminant metals

**Stamina**, BASF's latest Fluid Catalytic Cracking (FCC) Catalyst offering from the **Prox-SMZ** platform, demonstrates 45% better bottoms upgrading at commercial refinery trial.

### Goal

The refiner wanted to increase bottoms conversion to Light Cycle Oil (LCO) and gasoline from the resid FCC unit to meet the growing global demand for diesel. BASF suggested using **Stamina**, a new catalyst specially developed for distillate maximization from resid feeds. Based on our latest technology platform, **Prox-SMZ** (Proximal Stable Matrix & Zeolite) **Stamina** delivers the highest bottoms conversion per unit of coke production to aid in LCO maximization.

### Results

Stamina performed better than promised, delivering not just high distillate yields but also exceptional tolerance to high levels of a range of contaminant metals.

A summary of the trial results includes:

- 45% better bottoms upgrading at low delta coke
- High activity maintenance, even during periods of high iron and calcium
- 40% lower sodium for minimum H-transfer
- Higher matrix stability and higher zeolite stability

### Commercial trial data

	Before	After
Feed Concarbon, wt%	3.5	3.5
Feed API	28–30	28–30
Feed Rate (av), BPD	11000	11000
Reaction Temp, °F	965–970	965–970
Dry Gas	2.2	1.8
LPG, wt%	17.1	16.4
Naphtha, wt%	46.9	49.3
LCO, wt%	17.3	20.4
Bottoms, wt%	9.1	4.3
Delta Coke	1.13	0.9
Equilibrium Catalyst Metals, Ni, ppm	2981	3000
Equilibrium Catalyst Metals, V, ppm	426	969
Equilibrium Catalyst Metals, Ca, ppm	1697	2874
Equilibrium Catalyst Metals, Fe, ppm	1.19	1.28

## 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**

#### **Catalysts Headquarters**

BASF Corporation  
25 Middlesex/Essex Turnpike  
P.O. Box 770  
Iselin, NJ 08830-0770  
Tel: +1-732-205-7188

#### **Americas Sales Office**

BASF Corporation  
1111 Bagby Street, Suite 2600  
Houston, TX 77002  
Tel: +1-713-759-3002

#### **Asia Sales Office**

BASF South East Asia Pte Ltd  
7 Temasek Boulevard  
#35-01 Suntec Tower One  
Singapore 038987  
Tel: +65-6337-0330

#### **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

#### **Global Email**

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

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