

EnviroSOx

EnviroSOx additive consistently delivers less than 25 ppm SOx with less additive.

EnviroSOx, BASF's Fluid Catalytic Cracking (FCC) environmental additive, shows superior performance by routinely delivering less than 25 ppm SOx even at high feed sulfur levels

SOx reduction environmental additives are used to reduce flue gas SOx emissions from the Fluid Catalytic Cracking (FCC) units. EnviroSOx is BASF's most recent generation of SOx removal additives. With an optimized balance of key components, EnviroSOx offers improved performance, enabling low SOx emissions at a lower addition rate.

Goal

The refiner operates an FCC unit in the western region of the United States. To comply with the flue gas emission regulations, the refiner needs to reduce the SOx content in the FCC flue gas to less than 25 ppm. The refiner trialed EnviroSOx versus the incumbent additive.

Plan

BASF proposed EnviroSOx, a new SOx additive developed for enhanced performance.

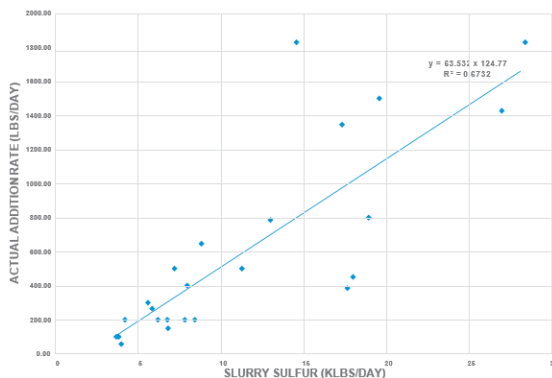


Figure 1. Slurry Sulfur vs Addition Rate

A multivariate statistical model using the operating data was developed to evaluate the performance of EnviroSOx vs the incumbent. During the analysis, the modeled and the actual rates were compared.

Results

EnviroSOx showed outstanding performance during the trial. Based on analysis of the statistical model, the refiner was able to use ~ 55 lbs/day less than the incumbent product. This improvement reduced consumption by 14%.

With EnviroSOx, the refinery is consistently able to meet the 25 ppm SOx target even when feed sulfur spikes during feed hydrotreater outages. In addition, EnviroSOx achieved this target with less additive than the incumbent.

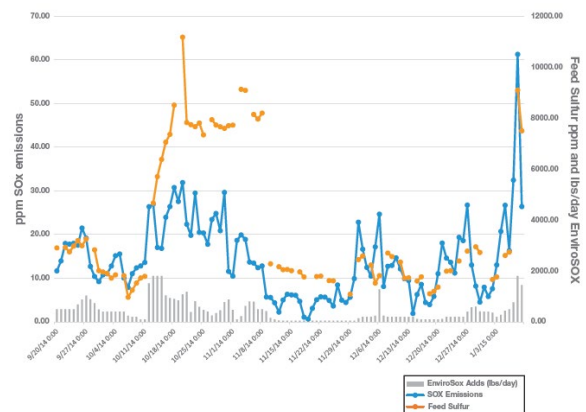


Figure 2. Full Born Sox Emissions Control

About Us

BASF Refinery Catalysts is a global industry leader in fluid catalytic cracking (FCC) catalysts and additives, with an unparalleled commitment to delivery of cutting-edge technology and services to the refining industry. As part of BASF, BASF Refinery Catalysts is leveraging its leading development platforms, global research infrastructure and passionate pursuit of innovation to develop novel, proprietary product and digital service technologies to help customers achieve their objectives and meet the challenges of the market. BASF Refinery Catalyst offers the highest degree of product flexibility in terms of surface area, zeolite/matrix ratio, metal traps, and particle size distribution. Its FCC catalysts offer not just a wide range of cost-effective solutions, but also the ability to deliver value through tailored products and services. BASF Refinery Catalyst continuously commercializes new technology innovations to meet evolving customer needs and continuous product improvement. The award-winning Valor technology, Boron Based Technology (BBT) and Distributed Matrix Structure (DMS) technology are leaders in the market. Unique market solutions are achieved with the Multiple Framework Topology (MFT) technology, Improved Zeolite Y (IZY) technology, Proximal Stable Matrix & Zeolite (Prox-SMZ) technology and our Advanced Innovative Matrix (AIM) technology.

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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 038937

Europe, Middle East, Africa

BASF SE
67056 Ludwigshafen, Germany

Email: refining-catalysts@basf.com
www.catalysts.basf.com/refining

www.catalysts.basf.com/refining

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