

News Release

P115/18e
February 1, 2018

BASF introduces Boroflex™ FCC catalyst for superior bottoms upgrading

- **Advanced catalyst technology with coke selective matrix to improve bottoms upgrading for residue feedstocks**
- **Operational flexibility to maximize profits for refiners using heavy resid feeds**
- **Minimizes hydrogen and coke production**

BASF announced today the commercial launch of Boroflex™, the latest evolution of its residuum (resid) oil Fluid Catalytic Cracking (FCC) catalysts for the refining market. Boroflex is based on BASF's unique Boron-Based Technology (BBT), and is designed to optimize refiners' bottoms upgrading and distillate yields by providing maximum nickel contamination passivation.

Boroflex commercial trials have confirmed its ability to deliver better bottoms upgrading and high distillate yields that increase refiners' profitability to meet market demand for refined products. It is proven to deliver other BBT-related benefits, such as nickel passivation, and lower coke and hydrogen.

"It is unique to introduce real step-change technologies into the FCC market. Thanks to our BBT platform, we are able to expand the portfolio for our customers with such innovative products," said Detlef Ruff, BASF Senior Vice President, Process Catalysts. "Boroflex, the latest evolution of this technology, demonstrates our ongoing commitment to delivering innovative catalyst solutions for improved FCC unit performance, which results in more value for our customers."

“Boroflex is an example of BASF’s ability to accelerate our speed to market with new product innovation,” said Jim Chirumbole, BASF Vice President, Refining Catalysts. “In our refinery trials, Boroflex showed the capability to increase yields and to exceed the bottoms upgrading performance of other products in the resid cracking market. We are really glad to offer now another innovative FCC catalyst that can make refiners all over the world more successful.”

Boroflex for superior bottoms upgrading is the third BBT product successfully introduced to optimize global refinery operations since the introduction of the innovative platform. BoroCat™, presented in 2016, enables maximum conversion for gasoline in FCC Units with high resid feed metals via improved metals passivation and operational flexibility. The product was awarded the 2017 Hydrocarbon Processing Award for best catalyst technology and the 2017 Thomas Alva Edison Patent Award for outstanding environmental contributions. In 2017, BASF introduced Borotec™ to provide refiners maximum conversion and high operating flexibility for use in FCC units with moderate resid feed metals or changing feed quality.

About BASF’s Catalysts Division

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. Further information on BASF’s Catalysts division is available on the Internet at www.catalysts.basf.com.

About BASF

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. The approximately 114,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into five segments: Chemicals, Performance Products, Functional Materials & Solutions, Agricultural Solutions and Oil & Gas. BASF generated sales of about €58 billion in 2016. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (BAS). Further information at www.basf.com.