Volume 3, Issue 2
August, 2013

Greater Feedstock Flexibility in EB Units

Opportunity crudes are economically attractive for ebullated bed upgrading because of price, but they are typically more difficult to process. Ordinarily, when feedstock quality gets worse, the EB reactor's operating severity (i.e. temperature, throughput, etc.) must be reduced to avoid or at least minimize downstream fouling and fuel oil instability. However, with a HCAT® system installed and operating in the EB unit, the problems associated with poorer-quality feedstock may be offset enough to continue the unit's normal operation.

How is this possible?

The HCAT technology offers refiners with ebullated bed reactors greater feedstock flexibility because:

1) HCAT facilitates transfer of hydrogen to the asphaltenic components of the heavy oil feed while maintaining stable and consistent operations, even when transitioning from one feedstock to another.

2) HCAT has been shown to reduce the downstream fouling associated with low quality feedstock hydrocracking. Hence, the EB operator can maintain residue conversion and feed rate without fear of higher sediment formation and subsequent fouling.

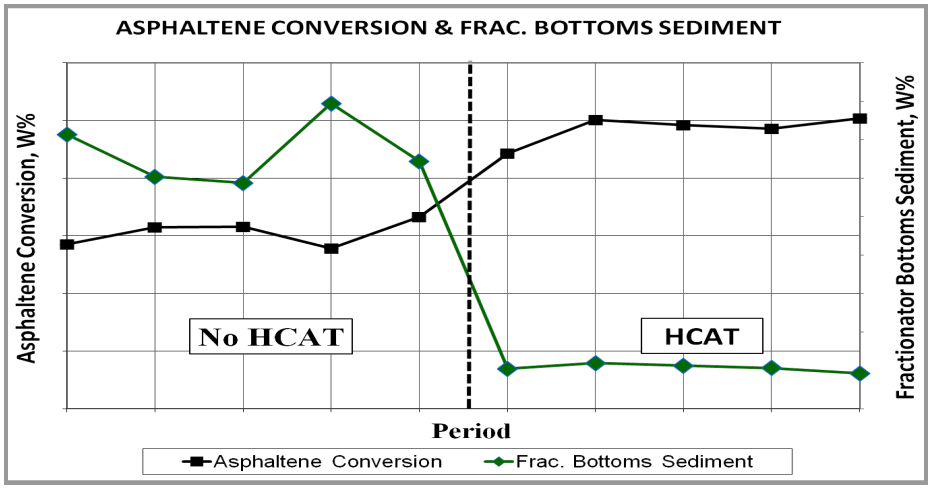
3) HCAT compliments the supported solid catalyst by helping it to target key reactions such as MCR, sulfur and nitrogen removal, thus providing additional economic advantages.

Would this be true for all crudes?

HCAT has been used commercially with a variety of crude oil residues including Urals, North Sea, Middle Eastern, Gulf of Mexico, and Mexican feedstocks in various combinations.

Even more feedstocks have been evaluated in HTI's ebullated bed pilot plants, including an extensive test program on a blend of Arabian Medium and Urals resids (80/20 by volume) which showed, as presented in the figure below, a significant increase in asphaltene conversion and sediment reduction by the addition of HCAT. Besides this effect, HCAT also had a positive impact on product properties within the unconverted residue product (1000°F+) including density, sulfur, hydrogen, viscosity, MCR, and asphaltenes.

After validating these results in a commercial trial at a U.S. refinery, HCAT is now being used commercially at two refineries, with two more expected to come on stream in 2014.



HTI's Announces Axens' H-Oil® Strategic Alliance

HTI announced earlier this year its technology alliance with Axens, one of the world's leading providers of technologies, catalysts, and services for the oil refining industry.

This alliance will enable the companies to offer Axens' H-Oil ebullated bed hydrocracking process along with HTI's proprietary HCAT hydrocracking technology and promote their use to efficiently convert "bottom-of-the–barrel" heavy residual oils into clean liquid fuels.

In a press release dated May 15, 2013, Axens' Senior Executive Vice President for Process Licensing Christian Dupraz stated, "This strategic alliance with HTI will allow refineries around the world and Axens H-Oil operators to benefit from the integration of our two complementary technologies. Axens, a global leader in Residue Hydrocracking technologies, will now be able to offer the most advanced and commercially proven residual oil upgrading process, thanks in part to the addition of HTI's HCAT technology." Stephanie Black, President of HTI, observed, "We are very excited to have this alliance with Axens. The combination of Axens' H-Oil technology with HTI's HCAT technology should make the utilization of ebullated bed hydrocrackers even more attractive than ever to refiners around the world."

Visit us at:

http://hcat-hti.com/