

BoroCat[®]

Fluid Catalytic Cracking (FCC) catalyst reduces hydrogen (H₂) by 25% and increases liquid product yields

BoroCat[®], BASF's first catalyst using novel Boron-Based Technology (BBT), provides high metals tolerance for lowest hydrogen and coke yields, and improves liquid product yields for over \$0.30/bbl profitability improvement

Introduction

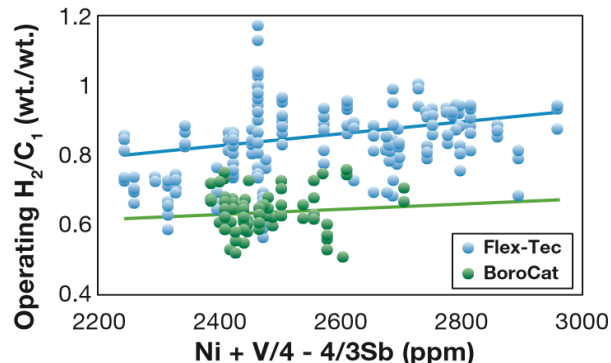
An FCC unit processing resid feedstock wants to minimize the negative impact of contaminant metals, especially nickel, and improve liquid product yields. This unit utilizes a catalyst cooler to maintain regenerator temperature and flush catalyst and antimony injection to control H₂ production as well as ZSM-5 for light olefins production.

Results

BoroCat showed excellent performance in the unit reducing H₂ yield and delta coke with improved yield selectivities in addition to:

- Profitability improvement of \$0.32/bbl (winter) and \$0.38/bbl (summer)
- 25% reduction in hydrogen-to-methane ratio (H₂/C₁) at equivalent metals and antimony addition
- Improved coke selectivity
- Deeper bottoms conversion
- Improved liquid yields
- Improved LCO selectivity

Figure 1. Hydrogen-to-methane ratio with equivalent Ni metals loading



Positive Yield Shifts on BoroCat*

	Before	After
ROT, °F	974	974
Delta coke (wt/wt)	0.71	0.64
Conversion, wt%	69.0	69.4
H ₂ , wt %	0.15	0.10
LPG, vol %	27.8	28.7
Gasoline, vol %	52.5	53.0
LCO, vol %	12.1	12.0
Slurry, vol %	7.7	7.4
LCO/Slurry, vol/vol	1.57	1.62

*Yields normalized for constant operating conditions

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