

CatGuard® As40 Arsenic Trap

CatGuard® Catalyst Protection You Can Count On

Description

CatGuard® As40 arsenic trap is a key part of Evonik’s comprehensive hydroprocessing product line. Evonik’s technology portfolio enables refiners to meet their product quality and cycle length targets in hydroprocessing applications for a fraction of the cost of conventional catalysts.

- Maximize Unit Performance
- Protect Against Poisoning
- Increase Life Cycle Length

Evonik offers extensive technical support, from catalyst modeling performance to unit startup and monitoring.

Application

Hydrotreaters that process feeds containing arsenic, include:

- Broad range of process feeds, from light to heavy
- Synthetic crudes
- Typical high arsenic crudes: Venezuelan, California, and Russian.

Typical Product Properties

Parameter	Units	As40
SA	m ² /g	> 200
CBD	lb/ft ³ (kg/m ³)	50 (800)
Composition	Nickel & Molybdenum on Alumina	

- High nickel content for enhanced arsenic pickup
- High surface area for superior silicon pickup
- Moderate hydrogenation activity
- Designed to trap arsenic in naphtha through diesel fractions
- Lower bulk density compared to the market leading arsenic trap

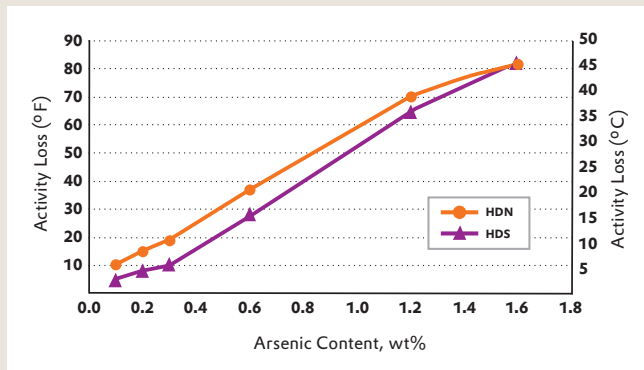


Little Rock Technology Center (LRTC)
Evonik’s pilot plant activity testing facility located in USA.

Proven Protection

Many opportunistic and synthetic crudes contain arsenic. Even at ppb levels, arsenic can cause significant catalyst deactivation, resulting in shorter run lengths. Evonik's **CatGuard® As40** provides enhanced protection above the main catalyst bed by trapping arsenic before it damages the catalyst's active sites. This protection will result in longer run lengths and lower catalyst costs.

Arsenic Impact on Activity



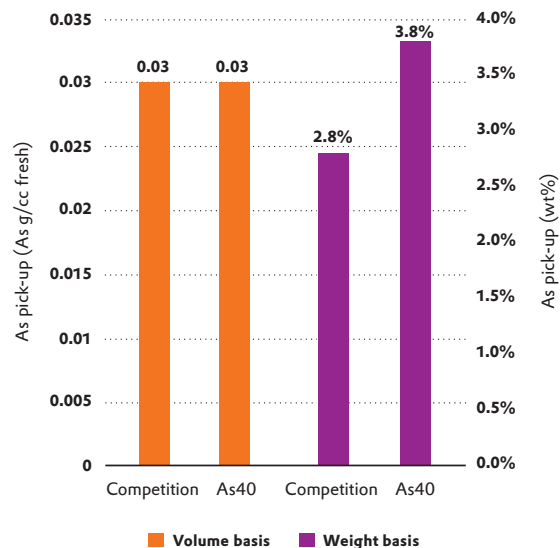
Evonik's Extensive Activity Testing Results

CatGuard® As40 was tested in Evonik's activity testing unit versus a market leading arsenic trap catalyst.

- Unit was maintained at isothermal temperature: 650 °F (343 °C)
- Catalyst arsenic capacity measured while monitoring to ensure no arsenic breakthrough

North American Refinery - SRGO

Parameter	Units	As40
LHSV	1/hr	10.0
Rx Pressure	Bar (psig)	41.4 (600)
WABT	°C (°F)	343 (650)
Total Arsenic in feed	ppmw	15



CatGuard® As40 measured higher arsenic pickup (weight basis) vs the market leading metals trap.

Same arsenic pick-up measured on a volume basis between **CatGuard® As40** and market leading arsenic trap.

CatGuard® As40 is offering much lower bulk density (about 20% less) vs market leading arsenic trap inducing higher arsenic pickup on a weight basis and significant cost savings.

Disclaimer

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