Honeywell | UOP Catalysts

UOP TA-20HP Catalyst

Transalkylation of C_7 and C_9^+ aromatics to form Xylene and Benzene

Description

TA-20HP catalyst is a solid, regenerable, zeolite catalyst used for disproportionation and transalkylation of toluene and C_9^+ aromatics to produce mixed xylenes. The TA-20 catalyst series incorporates a metal-function, but does not contain precious metals such as platinum or palladium.

Application

Transalkylation technologies such as the UOP Tatoray™ process are widely used in modern aromatics complexes to convert low-value toluene and heavy (C_9^+) aromatics into mixed xylenes and benzene. The yields of xylenes and benzene from the Tatoray unit are determined by the relative concentrations of toluene and heavy aromatics in the feed. In general, a higher concentration of heavy aromatics in the feed results in a higher yield of xylenes, but also results in more rapid catalyst deactivation. The TA-20 catalyst series incorporates a metal function which dramatically increases the stability of the catalyst when compared to catalysts that do not incorporate a metal function such as UOP TA-5™ catalyst. The exceptional stability of TA-20 catalyst series can be used to process feedstocks with up to 80 Wt% C_9^+ aromatics, with a cycle length of five years or more.

Experience

The original catalyst in the TA-20 catalyst series, TA-20 catalyst, was commercialized in 2004 and is currently operating in two Tatoray units. The initial TA-20HP catalyst operation started up in 2006, and is currently operating in twelve Tatoray units.

Typical Physical Properties (nominal)

Shape	Extrudate
Nominal diameter, mm (in)	1.7 (1/15)
Sock loaded ABD, kg/m^3 (lb/ft^3)	731 (45.6)
Metal	Rhenium

Packaging

- 55 U.S. gallon (210 liter) steel drum
- Net weight per drum of 130 kg



High Yields, Excellent Benzene Purity, Proven Performance.

FEATURES & BENEFITS

- More than 10 times the stability of TA-5 catalyst
- Higher activity than TA-5 catalyst
- Ability to process very high concentrations of heavy aromatics resulting in a higher xylene yield from the aromatics complex
- Debottlenecks the upstream extraction unit by being able to process unextracted toluene
- Produces a high purity benzene product of sufficient quality such that further processing in an extraction unit is not required

For more information

www.uop.com

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