



UOP OC-5™ Catalyst

Petrochemicals Catalyst

Description

OC-5 catalyst is a solid, non-regenerable catalyst used for selective combustion of hydrogen. OC-5 catalyst consists of a spherical alumina support impregnated with platinum and promoters.

Applications

OC-5 catalyst is used in the Smart™ SM process for production of styrene monomer (SM) from ethylbenzene (EB). The primary reaction is dehydrogenation of EB over an iron oxide catalyst to form SM and hydrogen. Because the dehydrogenation reaction is highly endothermic, conventional SM units employ two or more reaction stages with indirect steam reheat of the reaction mixture between stages. The Smart SM process employs an innovative oxidative reheat technology to selectively combust the hydrogen liberated by the dehydrogenation of EB. Selective oxidation of hydrogen with OC-5 catalyst provides direct and efficient reheat of the reaction mixture and shifts the reaction equilibrium toward production of SM. The Smart acronym stands for Styrene Monomer Advanced Reheat Technology.

OC-5 catalyst is the latest oxidation catalyst developed by UOP for the Smart SM process, replacing OC-4.2™ catalyst.

Features and benefits

- The Smart SM process is ideal for expanding the capacity of existing SM units by 30-50% with minimal capital investment.
- The spherical shape and improved formulation of OC-5 catalyst improves the diffusion characteristics of the catalyst and permits a more efficient distribution of platinum.
- OC-5 catalyst offers the same activity, selectivity and stability performance as OC-4.2 catalyst with half the platinum.

Experience

OC-5 catalyst was commercialized in 2003 and is currently operating in five Smart SM units.

Physical properties

Shape	Sphere
Nominal diameter, mm	3.8
ABD, kg/m ³	750
Metals	Platinum

Packaging

- 55 U.S. gallon (210 liter) steel drums
- Net weight per drum of 140 kilograms

For more information

For more information, contact your local UOP representative or our Des Plaines sales office:

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