



Adsorbents and Catalyst

ACTIVATED
ALUMINAS

Trace
Contaminant
Removal

Selexsorb® AS

Removal of trace catalyst contaminants from feed streams

Product Information

Selexsorb® AS is a smooth, alumina based spherical adsorbent impregnated with a promoter (active agent is CuO) to provide optimum adsorption capacity for arsine, phosphine and stibine. Selexsorb AS also has an affinity for sulfides such as carbonyl sulfide, hydrogen sulfide and carbon disulfide. Selexsorb AS is available as 1/8" spheres packaged in vapor barrier drums and sling bins.

Applications

1. The propylene feedstream to polypropylene production processes often contains trace levels of arsine, phosphine, carbonyl sulfide and hydrogen sulfide, especially if sourced from a fluid catalytic cracking unit. The high activity polymerization catalysts (Ziegler-Natta and metallocene) employed in polypropylene production processes can be severely deactivated by these arsenic, phosphorous, and sulfur based contaminants.

Selexsorb AS effectively removes these contaminants to effluent levels of <5 ppbw in liquid phase propylene and can be installed in a stand alone mode (AsH₃, PH₃, COS and H₂S removal) or in conjunction with an upstream vessel containing

Selexsorb COS selective adsorbent (for COS and H₂S removal in regenerative or non-regenerative mode).

2. Acetylene and methylacetylene-propadiene (MAPD) converter catalysts in olefin and polyolefin plants are poisoned by arsine and phosphine. Selexsorb AS is appropriate for removal of these contaminants from vapor phase ethylene/cracked gas streams. Test work has verified that Selexsorb AS does not form copper acetylides in the presence of acetylenes.

Benefits

Selexsorb AS has been proven to have superior adsorption capacity for arsine in side-by-side tests with competitive metal oxide based adsorbents. Through a licensing arrangement, procedures are available for the in-situ regeneration of Selexsorb AS placed in arsine removal service.

Use

To optimize Selexsorb AS selective adsorbent's capacity for arsine (i.e., reaction to form copper arsenate) it is recommended that the adsorbent be preconditioned by heating the packed bed with dry N₂ at 200°C (392°F) to desorb H₂O.

Typical Physical Properties (1/8 inch, 3.2mm)

Surface area, m ² /g	210
Crush Strength, lb (kg)	20 (9.0)
Abrasion loss, wt%	0.3
Packed bulk density, lb/ft ³ (kg/m ³)	48 (769)

Typical Chemical Properties

	wt%
Al ₂ O ₃ plus promoter	96.1
Trace impurities	0.4
LOI (250-1100°C)	3.5

Information presented herein is believed to be accurate and reliable but does not imply any guarantee or warranty by Almatis. Nothing herein shall be construed as an invitation to use processes covered by patents without proper arrangements with individuals or companies owning those patents.

MSDS Number - 946

PRODUCT
DATA

USA/4105-R02/0104 Page 1 of 1

United States of America & Latin America
Almatis AC, Inc.

Adsorbents & Catalysts
109 Highway 131, Vidalia, LA 71373 USA
Phone: 800-533-4511 or 318-336-9601 Fax: 318-336-9922
Website: www.almatis.com Email: adcats@almatis.com

Europe Frankfurt, Germany • Asia Tokyo, Japan

