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Product Data Sheet

PuriStar® R3-12

CuO/ZnO Tablets

PuriStar® R3-12 is a high-performance material widely used for removal of Arsine, Phosphine and reactive Sulfur from Propylene containing streams.

BASF PuriStar® R3-12 comes in the form of tablets with a nominal diameter of 5 mm and height of 3 mm (approx. 3/16" x 1/8"). Alternatively, it can be produced in smaller 3 x 3 mm tablets (also referred to as 1/8").

Product Application

Due to its high surface area and ultrafine copper crystallite size, PuriStar® R3-12 excels in the removal of arsine, phosphine, H_2S and COS from process and product streams. It is widely used in the purification of refinery, chemical and polymer grades of propylene. Typical applications include purification of propylene in front of cumene, Oxo-C4 and polypropylene units.

R3-12 can also be used as a guard bed to protect noble metal catalysts (e.g. MAPD hydrogenation catalysts), against poisoning by arsine and sulfur.

Besides treatment of propylene streams, R3-12 has also shown good performance in the treatment of ethylene or C4 streams.

The operating temperature of R3-12 is typically in the range of ambient to 50°C (120°F). During drying or reduction procedures, temperatures up to 250°C (480°F) during short periods of time are possible without a significant reduction of the capacity of the material.

Besides R3-12, BASF offers an improved version of the material under the trade name PuriStar® R3-22. Besides these adsorbents high in CuO content, BASF also offers materials with lower CuO content sold under the trade name Selexsorb® As and AS5. Please contact BASF for more details.

Before using the material, a drying step is recommended. This can either be done via a special operation or on-stream. Alternatively, BASF can also offer a pre-dried version of the material, which however then requires loading under dry gas. Please contact BASF for further details.

For streams containing H_2 beyond certain limits, a reduction of the material is required.

Typical Properties	
Chemical	
Main Components	CuO and ZnO
Balance	Alumina with promoters
Physical	
Crush Strength	Approx. 7 kg (15 lbs), side wall
Bulk Density	~ 1 250 kg/m³ (78 lbs/ft³), tapped ~ 1 150 kg/m³ (72 lbs/ft³), sock loaded

Packaging

- 980 kg net (2 160 lbs) in 1150 l super sacks (IBC flexible)
- 140 kg net (308.6 lbs) in 120 l steel drums

Shipping Point

- Ludwigshafen, Germany
- Shanghai, P.R. China

About Us

BASF is a leading global manufacturer of catalysts for the chemical industry, with solutions across the chemical value chain. The business comprises chemical catalysts and adsorbents and custom catalysts. Priority is given to developing new and improved products that enable the chemical industry transformation to net-zero emissions.

BASF's chemical catalysts and adsorbents business is part of the company's Performance Chemicals division. The division's portfolio also includes refinery catalysts, fuel and lubricant solutions, as well as oilfield chemicals and mining solutions. Customers from a variety of industries including Chemicals, Plastics, Consumer Goods, Energy & Resources and Automotive & Transportation benefit from our innovative solutions

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