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Product Data Sheet

Purivate™ Pd15 S 2-4 mm

Pd Impregnated Spheres

Purivate™ Pd15 is a newly developed catalyst for the removal of oxygen by reaction with hydrogen (De-oxo reaction) with a focus on H_2 generated in electrolysis.

Purivate™ are Catalysts and Adsorbents that enable sustainable technologies and help drive the energy transition forward.

General

Purivate™ Pd15 is a catalyst in the form of spheres with a nominal diameter of 2 – 4 mm and with Palladium as active component.

Product Application

Purivate™ Pd15 has been developed for the conversion of oxygen with hydrogen to form water (De-oxo reaction) according to the following chemical formula

$H_2 + ½\ O_2 \rightarrow H_2O\ (v) \quad \Delta_R H = -242\ kJ/mol\ (1)$

This reaction is applied in the production of pure hydrogen coming e.g. from electrolysis as part of the production of green H_2.

Due to the high exotherm of reaction (1), proper instrumentation and safety measures always need to be put in place to assure full control of the reaction.

Typical reaction temperatures are in the range of 50 – 100°C / 120 – 210°F. The maximum allowable temperature in H_2 containing streams is 300°C / 570°F.

Special Operations

Purivate™ Pd15 might gain maximum activity via a short activation procedure. Before unloading, the material should be oxidized.

Poisons

As every Pd containing catalyst Purivate™ Pd15 is sensitive against Sulfur and its components. Heavy metal compounds like AsH_3 will have a detrimental effect on its performance. CO will have an impact on activity but can be compensated e.g. via temperature.

Storage

Purivate™ Pd15 does not deteriorate or constitute any hazard when stored in sealed containers. The containers should not be allowed to become damp or wet and should not be stored in contact with organic or easily oxidizing vapors.

Target Properties	
Chemical Composition (dry basis)	0.15 % wt./wt. Pd on special Alumina
Typical Physical Properties	
Bulk Density (sock), g/ml	0.70

* These indicative properties do not represent process capabilities nor specifications.

Packaging

210 l steel drum with up to 140 kg (308.6 lbs) net

Point of Shipment

Rome, Italy

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, refinery catalysts and custom catalysts. In the process catalysts business, priority is given to developing new and improved products that enable the chemical industry transformation to net-zero emissions.

The division's portfolio also includes battery materials and recycling solutions, as well as environmental catalysts and metal solutions. Customers from a variety of industries including Automotive & Transportation, Chemicals, Plastics or Energy & Resources benefit from our innovative solutions. Further information on BASF's Catalysts division is available on the Internet at www.catalysts.basf.com.

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