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Product Data Sheet

0.3% Pt /AT Selectoxo R4754

Selectoxo

BASF Selectoxo is a Pt based catalyst in tablet form to selectively convert CO with O_2 in the presence of H_2.

General

Selectoxo is a catalyst in the form of cylindrical tablets with a nominal size of 3 x 3 mm and with Platinum as active component. In addition, a promoter modifies the activity of the Pt to allow for selective oxidation of CO in the presence of H_2.

Product Application

Selectoxo was originally developed as a complementary process step to methanation in ammonia plants.

Selectoxo is used to remove carbon monoxide from hydrogen streams by conversion with oxygen according to the following chemical formulae

$CO + ½\ O_2 \rightarrow CO_2$ (v) $\Delta_R H = -283$ kJ/mol (1)

Due to its modification, the catalyst can suppress the reaction of hydrogen with oxygen, which can be described by the following reaction

$H_2 + ½\ O_2 \rightarrow H_2O$ (v) $\Delta_R H = -242$ kJ/mol (2)

Oxygen is added close to the stoichiometric amount needed for the conversion of carbon monoxide.

Due to the high exotherm of reaction (1) and (2), proper instrumentation and safety measures need to be put in place to assure full control of the reaction.

Typical reaction temperatures are in the range of 40 – 100°C / 100 – 210°F to allow for best selectivity. The maximum allowable temperature is 400°C / 750°F.

The newly developed Purivate™ Pt30 Select will replace this catalyst.

Special Operations

Selectoxo might gain maximum activity via a short activation procedure.

Poisons

Selectoxo will last for long times if it is not subjected to poisoning by certain impurities. The principal poisons are sulfur and chlorine compounds as well as oil. These materials will deactivate and may eventually poison the catalyst permanently.

Storage

Selectoxo 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)	0.3 % wt./wt. Pt and promoter on Alumina
Typical Physical Properties	
Packed Bulk Density, g/ml	1.05
Total Surface Area (BET), m^2/g	90

Packaging

– Fiber drums, up to 100 kg 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, 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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