

Product Data Sheet

0.4% Pt 0.1% Rh/AT R4924

DeOxo MF

BASF DeOxo MF / R4924 is a bi-metallic catalyst in tablet from to remove H₂ and CO, but also hydrocarbons from different industrial gases like CO₂ and O₂ streams.

General

DeOxo MF/R4924 is a catalyst in the form of tablets with nominal 3 x 3 mm size and with Platinum and Rhodium as active components. The carefully selected surface area carrier allows for high activity and high temperature stability.

Product Application

DeOxo MF is used to promote the catalytic conversion of hydrogen and carbon monoxide according to the following chemical equations

$$H_2 + \frac{1}{2} O_2 \rightarrow H_2 O (v) \quad (\Delta_R H) = -242 \text{ kJ/mol (1)}$$

$$CO + \frac{1}{2} O_2 \rightarrow CO_2 (v) \quad (\Delta_R H) = -283 \text{ kJ/mol } (2)$$

This can be achieved by adding oxygen in overstoichiometric amount.

The catalyst shows also very good activity for the conversion of hydrocarbons like methane. The reaction can be described as follows:

$$CH_4 + 2 O_2 \rightarrow CO_2 + 2 H_2O (v)$$

 $(\Delta_R H) = -201 \text{ kJ/mol (3)}$

The purification of O_2 streams in front of Kr/Xe recovery units is an example of this application.

Due to the high exotherm of reactions (1) - (3), 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 130 - 300°C / 265 - 570°F. The maximum allowable temperature is 500°C / 930°F.

Special Operations

DeOxo MF/R4924 might gain maximum activity via a short activation procedure. Before unloading, the material should be oxidized.

Poisons

DeOxo MF/R4924 will last for very 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

DeOxo MF/R4924 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	0.4 % wt./wt. Pt and
(dry basis)	0.1 % wt./wt. Rh on
	Alumina (Al ₂ O ₃)
Typical Physical Properties	
Packed Bulk Density, g/ml	1.0
Total Surface Area (BET), m ² /g	90

Packaging

- 32 I fiber drum with up to 30 kg net
- 213 I steel drum with up to 200 kg net

Point of Shipment

- Rome, Italy

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