

0.3% Pt/AS R4758

DeOxo RS

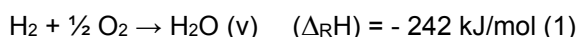
BASF DeOxo RS / R4758 is a uniform grey alumina sphere used typically for safely removing H₂ from CO₂ in front of Urea units. Other uses are the catalytic removal of oxygen or hydrogen (DeOxo reaction)

General

DeOxo RS is a catalyst in the form of spheres with a diameter ranging from 2.4 – 4 mm and with Platinum as the active component. The carefully selected surface area of the carrier allows for high activity and high temperature stability. At the same time, the material shows low enough pressure drop in gas phase applications due to its size.

Product Application

DeOxo RS is used to promote the catalytic conversion of hydrogen in the CO₂ stream upstream of Urea synthesis reactors with excess oxygen added. The reaction can be described by the following chemical formula



Hydrogen is a safety risk in this type of application and needs to be removed from levels of several thousand ppm by volume to below 10 ppm by volume.

Alternative uses are the conversion of oxygen with hydrogen or carbon monoxide or the conversion of hydrogen with oxygen to quantitatively remove these impurities in the respective gas streams.

BASF can provide, upon request, technical advice and recommendations on catalyst operating conditions and reactor layout.

An alternative material for this application can be

0.3% Pt/AT R4755 (DeOxo R)

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 130 – 200°C / 265 – 390°F for the application in Urea units. For other applications, the temperature might be as low as ambient temperature. The maximum allowable temperature is 500°C / 930°F.

Special Operations

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

Poisons

DeOxo RS will last for very long times provided that it is not subjected to poisoning by certain impurities. The principal poisons are Sulphur, chlorine compounds, oil, unsaturated hydrocarbons and the vapors of some organic solvents. These materials will deactivate and may eventually poison the catalyst permanently.

Storage

DeOxo RS 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 on Alumina
---	--------------------------------

Typical Physical Properties

Packed Bulk Density, kg/l	0.65
Total Surface Area (BET), m ² /g	90

Packaging

- 210 l steel drum with up to 140 kg net

Point of Shipment

- Rome, Italy

About Us

BASF's Catalysts division is the world's leading supplier of environmental and process catalysts. The group offers exceptional expertise in the development of technologies that protect the air we breathe, produce the fuels that power our world and ensure efficient production of a wide variety of chemicals, plastics and other products, including advanced battery materials. By leveraging our industry-leading R&D platforms, passion for innovation and deep knowledge of precious and base metals, BASF's Catalysts division develops unique, proprietary solutions that drive customer success.

BASF - We create chemistry

Americas

BASF Corporation
25 Middlesex/Essex Turnpike
Iselin, New Jersey, 08830, USA
Tel : +1-732-205-5000
Fax: +1-732-205-7725
Email: catalysts-america@basf.com

Asia Pacific

BASF (China) Company Limited
300 Jiang Xin Sha Road,
Pudong, Shanghai 200137
P.R. China
Tel: +86-21-2039 2549
Fax: +86-21-2039 4800-2549
Email: catalysts-asia@basf.com

Europe, Middle East, Africa

BASF De Meern BV Catalysts
The Netherlands
Tel: +31-30-666 9437
Email: catalysts-europe@basf.com

www.catalysts.basf.com/adsorbents

Although all statements and information in this publication are believed to be accurate and reliable, they are presented gratis and for guidance only, and risks and liability for results obtained by use of the products or application of the suggestions described are assumed by the user. NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH. Statements or suggestions concerning possible use of the products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that toxicity data and safety measures are indicated or that other measures may not be required. © 2015 BASF

BASF-10641 Rev. 12/20