

# 0.5% Pd/AS R4577

## DeOxo DS

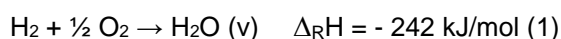
**R4577 / DeOxo DS is used for the removal of hydrogen by reaction with oxygen (De-Oxo reaction).**

### General

R4577 / DeOxo DS is a catalyst in the form of spheres with a nominal diameter of 2.4 – 4 mm and with Palladium as active component. The lower surface alumina carrier has been carefully chosen for providing optimum activity and high selectivity. The material is delivered dry and pre-reduced.

### Product Application

R4577 / DeOxo DS is used for the conversion of hydrogen in the presence of oxygen to form water (De-Oxo reaction) according to the following chemical formula:



This reaction can be applied in the production of pure hydrogen (e.g., as green hydrogen) or in the production of inert gases like N<sub>2</sub> or He, when adding hydrogen to remove oxygen. An alternative material for this application can be

0.3% Pd/AS R4578 (DeOxo DS3).

Typical reaction temperatures are in the range of 50 – 100°C / 120 – 210°F. The maximum allowable temperature is 500°C / 930°F.

### Special Operations

R4577 / DeOxo DS might gain maximum activity via a short activation procedure. Before unloading the material should be oxidized.

### Poisons

As every Pd containing catalyst R4577 / DeOxo DS is sensitive against Sulfur and its components. Heavy metal containing compounds like AsH<sub>3</sub> can also have a determinantal effect on its performance. CO will have an impact on activity but might be compensated via higher temperature.

### Storage

R4577 / DeOxo DS 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\*

|   |                                    |
|---|------------------------------------|
| <b>Chemical Composition (dry basis)</b> | 0.5% wt./wt. Pd on special Alumina |
|---|------------------------------------|

### Typical Physical Properties

|                           |             |
|---------------------------|-------------|
| Packed Bulk Density, g/ml | Approx. 0.7 |
|---------------------------|-------------|

|   |            |
|---|------------|
| Total Surface Area (BET), m <sup>2</sup> /g | Approx. 90 |
|---|------------|

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

### Packaging

- 120 l steel drum with nominal up to 25 kg net
- 60 l fiber drum with nominal up to 40 kg net

### Point of Shipment:

- Rome, Italy

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