SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification

Product Description: Palladium on activated carbon, unreduced
Cat No.: 195030000; 195030010; 195030100; 195030500; 195032500
Synonyms: None.
Molecular Formula: Pd

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use: Laboratory chemicals.
Uses advised against: No Information available

1.3. Details of the supplier of the safety data sheet

Company: Acros Organics BVBA
Janssen Pharmaceuticaal 3a
2440 Geel, Belgium
E-mail address: begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US: 001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US: 001-800-424-9300 / Europe: 001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards
Flammable solids: Category 2 (H228)

Health hazards
Based on available data, the classification criteria are not met

Environmental hazards
Based on available data, the classification criteria are not met

2.2. Label elements
Signal Word  Warning

Hazard Statements  
H228 - Flammable solid  
May form combustible dust concentrations in air

Precautionary Statements  
P233 - Keep container tightly closed

2.3. Other hazards

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>EC-No.</th>
<th>Weight %</th>
<th>CLP Classification - Regulation (EC) No 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>7440-44-0</td>
<td>EEC No. 231-153-3</td>
<td>90-97</td>
<td>Flam. Sol. 2 (H228)</td>
</tr>
<tr>
<td>Palladium</td>
<td>7440-05-3</td>
<td>EEC No. 231-115-6</td>
<td>3-10</td>
<td>-</td>
</tr>
</tbody>
</table>

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact  
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact  
Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Ingestion  
Do not induce vomiting. Obtain medical attention.

Inhalation  
Move to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration.

Protection of First-aiders  
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

No information available.
4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician  Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture

Flammable. Risk of ignition. Dust can form an explosive mixture in air. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Fine dust dispersed in air may ignite.

Hazardous Combustion Products
None under normal use conditions.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Remove all sources of ignition. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing.

6.2. Environmental precautions

Avoid release to the environment. See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up

Remove all sources of ignition. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Use spark-proof tools and explosion-proof equipment. Avoid contact with skin, eyes and clothing.
Avoid ingestion and inhalation.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

7.3. Specific end use(s)
Use in laboratories

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1. Control parameters

**Exposure limits**

<table>
<thead>
<tr>
<th>Component</th>
<th>European Union</th>
<th>The United Kingdom</th>
<th>France</th>
<th>Belgium</th>
<th>Spain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>TWA: 10mg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palladium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Austria</th>
<th>Denmark</th>
<th>Switzerland</th>
<th>Poland</th>
<th>Norway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>MAK-KZW: 10 mg/m³ 15 Minuten</td>
<td>MAK-TMW: 5 mg/m³ 8 Stunden</td>
<td>TWA: 4.0 mg/m³ 8 godzinach</td>
<td>TWA: 1.0 mg/m³ 8 godzinach</td>
<td>TWA: 6.0 mg/m³ 8 godzinach</td>
</tr>
<tr>
<td>Palladium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Biological limit values**
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

**Monitoring methods**
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

**Derived No Effect Level (DNEL)**
No information available

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Acute effects (local)</th>
<th>Acute effects (systemic)</th>
<th>Chronic effects (local)</th>
<th>Chronic effects (systemic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ACR19503
Safety Data Sheet

Palladium on activated carbon, unreduced

Revision Date 24-May-2017

Predicted No Effect Concentration (PNEC)
No information available.

8.2. Exposure controls

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye Protection
Safety glasses with side-shields (European standard - EN 166)

Hand Protection
Protective gloves

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

Inspect gloves before use.

Glove material Breakthrough time Glove thickness EU standard Glove comments
Natural rubber See manufacturers - EN 374 (minimum requirement)
Nitrile rubber recommendations
Neoprene
PVC

Respiratory Protection
No protective equipment is needed under normal use conditions.

Large scale/emergency use
Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Small scale/Laboratory use
Maintain adequate ventilation.

Environmental exposure controls
No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance Black
Physical State Powder Solid
Odor Odorless
Odor Threshold No data available
pH Not applicable
Melting Point/Range No data available
Softening Point No data available
### SAFETY DATA SHEET

**Palladium on activated carbon, unreduced**

**Revision Date** 24-May-2017

---

#### Boiling Point/Range
- No information available

#### Flash Point
- No information available

#### Evaporation Rate
- Not applicable

#### Flammability (solid, gas)
- No information available

#### Explosion Limits
- No data available

#### Vapor Pressure
- Negligible

#### Vapor Density
- Not applicable

#### Specific Gravity / Density
- 12.02

#### Bulk Density
- No data available

#### Water Solubility
- Insoluble

#### Solubility in other solvents
- No information available

#### Partition Coefficient (n-octanol/water)
- Not applicable

#### Autoignition Temperature
- Not applicable 120 °C / 248 °F

#### Decomposition Temperature
- > 120°C

#### Viscosity
- Not applicable

#### Explosive Properties
- No information available

#### Oxidizing Properties
- No information available

---

### SECTION 10: STABILITY AND REACTIVITY

#### 10.1. Reactivity
- None known, based on information available

#### 10.2. Chemical stability
- Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

**Hazardous Polymerization**
- Hazardous polymerization does not occur.

**Hazardous Reactions**
- No information available.

#### 10.4. Conditions to avoid
- Keep away from open flames, hot surfaces and sources of ignition. Incompatible products. Avoid dust formation.

#### 10.5. Incompatible materials

#### 10.6. Hazardous decomposition products
- None under normal use conditions.

---

### SECTION 11: TOXICOLOGICAL INFORMATION

#### 11.1. Information on toxicological effects

**Product Information**
- No acute toxicity information is available for this product

**Oral**
- Based on available data, the classification criteria are not met

**Dermal**
- No data available
Inhalation
No data available

### Toxicology data for the components

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>LD50 &gt; 10000 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization; No data available
Respiratory
No data available
Skin
No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available
There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

<table>
<thead>
<tr>
<th>Target Organs</th>
<th>None known.</th>
</tr>
</thead>
</table>

(j) aspiration hazard; Not applicable
Solid

### Other Adverse Effects
The toxicological properties have not been fully investigated.

### Symptoms / effects, both acute and delayed
No information available

### SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity effects
Do not empty into drains.

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Persistence</th>
<th>Insoluble in water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degradability</td>
<td>Not relevant for inorganic substances</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential
May have some potential to bioaccumulate

12.4. Mobility in soil
Spillage unlikely to penetrate soil
Is not likely mobile in the environment due its low water
solubility.

12.5. Results of PBT and vPvB assessment
No data available for assessment.

12.6. Other adverse effects
Endocrine Disruptor Information
This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant
This product does not contain any known or suspected substance
Ozone Depletion Potential
This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste from Residues / Unused Products
Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.
Contaminated Packaging
Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

European Waste Catalogue (EWC)
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
Other Information
Waste codes should be assigned by the user based on the application for which the product was used. Do not dispose of waste into sewer. Can be incinerated, when in compliance with local regulations.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN3178
14.2. UN proper shipping name FLAMMABLE SOLID, INORGANIC, N.O.S
14.3. Transport hazard class(es) 4.1
14.4. Packing group III

ADR

14.1. UN number UN3178
14.2. UN proper shipping name FLAMMABLE SOLID, INORGANIC, N.O.S
14.3. Transport hazard class(es) 4.1
14.4. Packing group III

IATA

14.1. UN number UN3178
14.2. UN proper shipping name FLAMMABLE SOLID, INORGANIC, N.O.S
14.3. Transport hazard class(es) 4.1
14.4. Packing group III

14.5. Environmental hazards No hazards identified
14.6. Special precautions for user No special precautions required
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable, packaged goods
SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>PICCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>AICS</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>231-153-3</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Palladium</td>
<td>231-115-6</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

National Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Germany - Water Classification (VwVwS)</th>
<th>Germany - TA-Luft Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>nwg - nicht wassergefährdend (non-hazardous to waters)</td>
<td></td>
</tr>
<tr>
<td>Palladium</td>
<td>nwg - nicht wassergefährdend (non-hazardous to waters)</td>
<td></td>
</tr>
</tbody>
</table>

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H228 - Flammable solid

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:
SAFETY DATA SHEET  

Palladium on activated carbon, unreduced 

Physical hazards  On basis of test data  
Health Hazards  Calculation method  
Environmental hazards  Calculation method  

Training Advice  
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.  
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.  
First aid for chemical exposure, including the use of eye wash and safety showers.  

Creation Date  26-Sep-2009  
Revision Date  24-May-2017  
Revision Summary  Update to Format.  

Disclaimer  
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.  

End of Safety Data Sheet