

Safety data sheet

according to Regulation (EC) No. 1907/2006

Printing date 17.01.2012

Version number 1

Revision: 13.01.2012

1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** Palladium(II) nitrate dihydrate ~40 % Pd
- **Article number:** 9026
- **CAS Number:**
32916-07-7
- **EC number:**
233-265-8
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation** Laboratory chemical
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Carl Roth GmbH + Co. KG
Schoemperlenstraße 3-5
76185 Karlsruhe
Germany
Telefon: +49/(0)721 5606-0 Telefax: +49/(0)721 5606-149 E-Mail: sicherheit@carlroth.de
- **Further information obtainable from:** Department Health, Safety and Environment
- **Emergency telephone number:** Poison Centre Munich Telefon +49/(0)89 19240

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
Ox. Sol. 2 H272 May intensify fire; oxidiser.
Acute Tox. 3 H301 Toxic if swallowed.
Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
C; Corrosive
R34: Causes burns.
Xn; Harmful
R22: Harmful if swallowed.
O; Oxidising
R8: Contact with combustible material may cause fire.
N; Dangerous for the environment
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS03



GHS05



GHS06



GHS09

- **Signal word** Danger
- **Hazard statements**
H272 May intensify fire; oxidiser.
H301 Toxic if swallowed.

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H314 Causes severe skin burns and eye damage.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P221 Take any precaution to avoid mixing with combustibles.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P273 Avoid release to the environment.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

Other hazards

All chemicals are potentially dangerous. They should only be handled by specially trained personnel.

Results of PBT and vPvB assessment· **PBT:** Not applicable.· **vPvB:** Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances**CAS No. Description**

32916-07-7 Palladium(II) nitrate dihydrate

Identification number(s)· **EC number:** 233-265-8

4 First aid measures

Description of first aid measures**General information:**

Immediately remove any clothing soiled by the product.

General advice: No induce of vomiting by layman.

· **After inhalation:** Supply fresh air or oxygen; call for doctor.**After skin contact:**

Clean with water and soap. If possible, also wash with polyethylene glycol 400.

If there is any trouble seek medical help.

After eye contact:

Rinse immediately for 15 minutes with plenty of water with the eyelid held wide open. Seek medical advice.

After swallowing:

Rinse out mouth and drink a glass of water. Do not induce vomiting.

Risk of perforation!

Call for a doctor immediately and show the container or label.

Information for doctor:· **Most important symptoms and effects, both acute and delayed** No further relevant information available.**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Firefighting measures

Extinguishing media**Suitable extinguishing agents:**

Use fire extinguishing methods suitable to surrounding conditions.

Water, CO₂, powder, foam.**Special hazards arising from the substance or mixture**

Oxidising.

Keep away from flammable substances.

In case of fire, the following can be released:

Nitrogen oxides (NO_x)

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- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information** Prevent fire-fighting water from entering surface water or groundwater.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Avoid formation of dust.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ground water or penetrate the soil.
Keep contaminated washing water and dispose of appropriately.
- **Methods and material for containment and cleaning up:**
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
Dispose of the material collected according to regulations.
Use neutralizing agent.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Handling corresponding to laboratory safety guidelines.
Thorough dedusting.
- **Information about fire - and explosion protection:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Unsuitable material for receptacle: aluminium.
Unsuitable material for receptacle: steel.
- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from flammable substances.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 - Do not eat, drink or smoke while working.
 - Keep away from foodstuffs, beverages and feed.
 - Immediately remove all soiled and contaminated clothing.
 - Wash hands before breaks and at the end of work.
 - Avoid contact with the eyes and skin.
- **Respiratory protection:** Required when dusts are generated: filter 2.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**
Nitrile rubber, thickness: 0.5 mm
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
Value for the permeation: Level ≥ 6
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Protective work clothing

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Solid
Colour:	Brown
Odour:	like nitric acid
Odour threshold:	Not determined.

- **pH-value (1 g/l) at 20°C:** <1

- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Not applicable (decomposition)

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Contact with combustible material may cause fire.

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· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Self-igniting:	Not determined.
· Danger of explosion:	Not determined.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapour pressure:	Not applicable.
· Density:	Not determined.
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with water:	Decomposition.
· Segregation coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Other information	No further relevant information available.

10 Stability and reactivity

- Reactivity
- Chemical stability
- Thermal decomposition / conditions to be avoided:
Releases water of crystallization when heated up to 100 °C.
No decomposition if used and stored according to specifications.
- Possibility of hazardous reactions Reacts with flammable substances.
- Conditions to avoid No further relevant information available.
- Incompatible materials: Combustible material.
- Hazardous decomposition products: No information available.
- Additional information: Corrosive effect.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:

· LD/LC50 values relevant for classification:

Oral	LD50	200-2000 mg/kg (rat)
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- Primary irritant effect:
- on the skin: Caustic effect on skin and mucous membranes.
- on the eye: Strong caustic effect.
- after inhalation: No irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
After swallowing: burns in the mouth, throat, oesophagus and gastrointestinal tract, risk of perforation in the oesophagus and gastrointestinal tract.
After absorption of large quantities methaemoglobinaemia.

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Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Further information:** The product should be handled with the care usual when dealing with chemicals.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **Fish toxicity:**

LC50	116 mg/l/96 h (Cyprinus carpio)
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· **Daphnia toxicity:**

EC50	1.7 mg/l/48 h (Daphnia magna)
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· **Algal toxicity:**

IC50	0.064 mg/l/72 h (Desmodesmus subspicatus)
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· **Persistence and degradability** No further relevant information available.

· **Behaviour in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Ecotoxicological effects:**

· **Remark:**

Do not allow to enter waters, waste water, or soil!

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Very toxic for fish

· **Additional ecological information:**

· **General notes:**

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation**

The disposal is regionally differently regulated, therefore the kind of disposal is to be inquired at the responsible authorities.

This material and its container must be disposed of as hazardous waste.

· **Uncleaned packaging:**

· **Recommendation:** Disposal according to official regulations.

14 Transport information

· **UN-Number**

· **ADR, IMDG, IATA**

UN3085

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· **UN proper shipping name**· **ADR**· **IMDG**· **IATA**

3085 OXIDIZING SOLID, CORROSIVE, N.O.S. (Palladium(II) nitrate dihydrate), ENVIRONMENTALLY HAZARDOUS OXIDIZING SOLID, CORROSIVE, N.O.S. (Palladium(II) nitrate dihydrate), MARINE POLLUTANT OXIDIZING SOLID, CORROSIVE, N.O.S. (Palladium(II) nitrate dihydrate)

· **Transport hazard class(es)**· **ADR**· **Class**

5.1 Oxidising substances.

· **Label**

5.1+8

· **IMDG**· **Class**

5.1 Oxidising substances.

· **Label**

5.1+8

· **IATA**· **Class**

5.1 Oxidising substances.

· **Label**

5.1+8

· **Packing group**· **ADR, IMDG, IATA**

II

· **Environmental hazards:**

Environmentally hazardous substance, solid; Marine Pollutant

· **Marine pollutant:**

Yes (P)

· **Special marking (ADR):**

Symbol (fish and tree)

Symbol (fish and tree)

· **Special precautions for user**

Warning: Oxidising substances.

· **Danger code (Kemler):**

58

· **EMS Number:**

F-A,S-Q

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**· **ADR**· **Limited quantities (LQ)**

1 kg

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· Tunnel restriction code	E
· UN "Model Regulation":	UN3085, OXIDIZING SOLID, CORROSIVE, N.O.S. (Palladium(II) nitrate dihydrate), ENVIRONMENTALLY HAZARDOUS, 5.1 (8), II

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations:**
- **Information about limitation of use:** In dealing with chemicals the national laws must be observed.
- **Waterhazard class:** Water hazard class 3 (Self-assessment): extremely hazardous for water.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases** Contact with combustible material may cause fire.
- **Department issuing MSDS:** Department: Health, Safety and Environment
- **Contact:** Herr Heine
- **Abbreviations and acronyms:**
 - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - IMDG: International Maritime Code for Dangerous Goods
 - IATA: International Air Transport Association
 - ICAO: International Civil Aviation Organization
 - P: Marine Pollutant
 - GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
- *** Data compared to the previous version altered.**

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