

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 19.03.2018

Version number 3

Revision: 19.03.2018

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

- **1.1 Product identifier**
- **Trade name: Tetraamminpalladium(II)-chlorid-Loesung 75g Pd/l / 100g Pd/l**
Tetraamminepalladium(II)-chloride solution
- **Article number:** 4040810202, 4040810102
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Galvanic bath
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Wieland Edelmetalle GmbH
Schwenninger Str. 13
75179 Pforzheim
Telefon +49 (07231)-1393-0, Telefax +49 (07231)-1393-100
- **Further information obtainable from:**
Wieland Edelmetalle GmbH
www.wieland-edelmetalle.de
msds@wieland-edelmetalle.de
- **1.4 Emergency telephone number:**
Emergency CONTACT (24-Hour-Number):GBK GmbH +49 (0)6132-84463

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

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



GHS07



GHS09

- **Signal word** Warning
- **Hazard-determining components of labelling:**
Tetraamminepalladium(II)-chloride hydrate
- **Hazard statements**
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H411 Toxic to aquatic life with long lasting effects.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.

(Contd. on page 2)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 19.03.2018

Version number 3

Revision: 19.03.2018

**Trade name: Tetraamminpalladium(II)-chlorid-Loesung 75g Pd/I / 100g Pd/I
Tetraamminpalladium(II)-chloride solution**

(Contd. of page 1)

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

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.




P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 13815-17-3	Tetraamminpalladium(II)-chloride hydrate	20-<25%
EINECS: 237-489-7	 Met. Corr. 1, H290;  Aquatic Acute 1, H400; Aquatic Chronic 1, H410;  Acute Tox. 4, H302; Eye Irrit. 2, H319; Skin Sens. 1, H317	

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture**
Under certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 19.03.2018

Version number 3

Revision: 19.03.2018

**Trade name: Tetraamminpalladium(II)-chlorid-Loesung 75g Pd/l / 100g Pd/l
Tetraamminepalladium(II)-chloride solution**

(Contd. of page 2)

Ensure adequate ventilation.

· **6.4 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.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Keep away from heat and direct sunlight.

· **Information about fire - and explosion protection:** No special measures required.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:** No special requirements.

· **Information about storage in one common storage facility:** Do not store together with acids.

· **Further information about storage conditions:** Keep receptacle tightly sealed.

· **Storage class:** 10-13

· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

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:** Use suitable respiratory protective device in case of insufficient ventilation.

· **Protection of hands:**



Protective gloves

· **Material of gloves**

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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Butyl rubber, BR

Chloroprene rubber, CR

Nitrile rubber, NBR

Fluorocarbon rubber (Viton)

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 4)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 19.03.2018

Version number 3

Revision: 19.03.2018

**Trade name: Tetraamminpalladium(II)-chlorid-Loesung 75g Pd/l / 100g Pd/l
Tetraamminepalladium(II)-chloride solution**

(Contd. of page 3)

· **Not suitable are gloves made of the following materials:**

- Leather gloves
- Strong material gloves

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Fluid
Colour:	Yellow
Odour:	Ammonia-like

· **pH-value at 20 °C:** ca. 11

· **Change in condition**

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	Undetermined.

· **Flash point:** Not applicable.

· **Auto-ignition temperature:** Product is not selfigniting.

· **Explosive properties:** Product does not present an explosion hazard.

· **Density at 20 °C:** 1,0 - 1,2 g/cm³

· **Solubility in / Miscibility with water:** Fully miscible.

· **Solvent content:**

Organic solvents: 0,0 %

· **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.

· **10.2 Chemical stability**

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

· **10.3 Possibility of hazardous reactions** Contact with water releases irritant gases.

· **10.4 Conditions to avoid** No further relevant information available.

· **10.5 Incompatible materials:** No further relevant information available.

· **10.6 Hazardous decomposition products:** Ammonia

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**

· **Acute toxicity** Based on available data, the classification criteria are not met.

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 19.03.2018

Version number 3

Revision: 19.03.2018

**Trade name: Tetraamminpalladium(II)-chlorid-Loesung 75g Pd/l / 100g Pd/l
Tetraamminepalladium(II)-chloride solution**

(Contd. of page 4)

· **LD/LC50 values relevant for classification:**

ATE (Acute Toxicity Estimates)

Oral	LD50	2,203 mg/kg
------	------	-------------

13815-17-3 Tetraamminepalladium(II)-chloride hydrate

Oral	LD50	500 mg/kg (ATE)
------	------	-----------------

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water danger class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Contact manufacturer for recycling information.
Must be specially treated adhering to official regulations.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN3082

(Contd. on page 6)

GB

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 19.03.2018

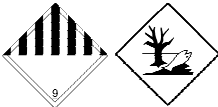
Version number 3

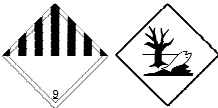
Revision: 19.03.2018

**Trade name: Tetraamminpalladium(II)-chlorid-Loesung 75g Pd/I / 100g Pd/I
Tetraamminepalladium(II)-chloride solution**

(Contd. of page 5)

· **14.2 UN proper shipping name**
· **ADR** 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tetraamminepalladium(II)-chloride hydrate)
· **IMDG** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tetraamminepalladium(II)-chloride hydrate), MARINE POLLUTANT
· **IATA** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tetraamminepalladium(II)-chloride hydrate)

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

 · **Class** 9 (M6) Miscellaneous dangerous substances and articles.
 · **Label** 9

· **IMDG, IATA**

 · **Class** 9 Miscellaneous dangerous substances and articles.
 · **Label** 9

· **14.4 Packing group**
· **ADR** III
· **IMDG, IATA** II

· **14.5 Environmental hazards:**
· **Marine pollutant:** No
Symbol (fish and tree)
· **Special marking (ADR):** Symbol (fish and tree)
· **Special marking (IATA):** Symbol (fish and tree)

· **14.6 Special precautions for user** Warning: Miscellaneous dangerous substances and articles.
· **Danger code (Kemler):** 90
· **EMS Number:** F-A,S-F

· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **ADR**
 · **Limited quantities (LQ)** 5L
 · **Excepted quantities (EQ)** Code: E1
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 1000 ml
 · **Transport category** 3
 · **Tunnel restriction code** E

(Contd. on page 7)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 19.03.2018

Version number 3

Revision: 19.03.2018

**Trade name: Tetraamminpalladium(II)-chlorid-Loesung 75g Pd/I / 100g Pd/I
Tetraamminepalladium(II)-chloride solution**

(Contd. of page 6)

· **UN "Model Regulation":** UN3082, ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, LIQUID, N.O.S.
(Tetraamminepalladium(II)-chloride hydrate), 9, III

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category E2** Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
- **National regulations:**
- **Waterhazard class:** Water danger class 3 (Self-assessment): extremely hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 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**
H290 May be corrosive to metals.
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
- **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Met. Corr. 1: Corrosive to metals – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
- *** Data compared to the previous version altered.**