

**Safety Data Sheet dated 16/10/2023, version 5**

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

### **1.1. Product identifier**

Identification of the substance

Trade name: D301 - PD CABRO

Trade code: D301

Name: Tetraamminepalladium(2+) dichloride

CAS number: 13815-17-3

EC number: 237-489-7

REACH: The substance is not subject to registration as it is produced in amounts less than 1 ton/year

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

Recommended use:

Galvanic, base and lab chemistry

### **1.3. Details of the supplier of the safety data sheet**

Company:

CABRO SPA - AREZZO

Road Setteponti 141

52100 - Italy

CABRO SPA

Phone n. +39 0575 984442

Office hours: 9-13 / 14.30-17.30

Competent person responsible for the safety data sheet:

sds@cabro.it

### **1.4. Emergency telephone number**

CABRO SPA

Phone n. +39 0575 984442

Office hours: 9-13 / 14.30-17.30

Single European emergency number: 112

Poison Information Center - 24/24h Foggia Hospital - Phone +39 0881-732326

Poison Information Center - 24/24h Bergamo Hospital - Phone +39 800 883300

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## **SECTION 2: Hazards identification**

### **2.1. Classification of the substance or mixture**

EC regulation criteria 1272/2008 (CLP)

⚠ Warning, Met. Corr. 1, May be corrosive to metals.

⚠ Warning, Acute Tox. 4, Harmful if swallowed.

⚠ Warning, Eye Irrit. 2, Causes serious eye irritation.

⚠ Warning, Skin Sens. 1, May cause an allergic skin reaction.

⚠ Warning, Aquatic Acute 1, Very toxic to aquatic life.

⚠ Warning, Aquatic Chronic 1, Very toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

### **2.2. Label elements**

Hazard pictograms:



Warning

**Hazard statements:**

H290 May be corrosive to metals.  
H302 Harmful if swallowed.  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.  
H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statements:**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash hands thoroughly after handling.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/clothing and eye/face protection.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P391 Collect spillage.

**Special Provisions:**

None

**Contains**

Tetraamminepalladium dichloride

**Special provisions according to Annex XVII of REACH and subsequent amendments:**

None

**2.3. Other hazards**

No PBT, vPvB or endocrine disruptor substances present in concentration  $\geq 0.1\%$

**Other Hazards:**

No other hazards

## SECTION 3: Composition/information on ingredients

**3.1. Substances**

Identification of the substance

Chemical characterization: Tetraamminepalladium(2+) dichloride

Trade code: D301

CAS number: 13815-17-3

EC number: 237-489-7

Qty	Name	Ident. Number	Classification
100 %	Tetraamminepalladium dichloride	CAS: 13815-17-3 EC: 237-489-7	<p>2.16/1 Met. Corr. 1 H290</p> <p>3.1/4/Oral Acute Tox. 4 H302</p> <p>3.3/2 Eye Irrit. 2 H319</p> <p>3.4.2/1-1A-1B Skin Sens. 1, 1A, 1B H317</p> <p>4.1/A1 Aquatic Acute 1 H400 M=100.</p> <p>4.1/C1 Aquatic Chronic 1 H410 M=10.</p>

M factor:

M: 100

M (chronic): 10

**3.2. Mixtures**

N.A.

## **SECTION 4: First aid measures**

### **4.1. Description of first aid measures**

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

OBTAIN IMMEDIATE MEDICAL ATTENTION.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Give nothing to eat or drink.

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

None

### **4.3. Indication of any immediate medical attention and special treatment needed**

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

None

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## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

Suitable extinguishing media:

Water.

Carbon dioxide (CO<sub>2</sub>).

Extinguishing media which must not be used for safety reasons:

None in particular.

### **5.2. Special hazards arising from the substance or mixture**

Do not inhale combustion gases

Burning produces heavy smoke.

### **5.3. Advice for firefighters**

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

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## **SECTION 6: Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**

For non emergency personnel:

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

### **6.2. Environmental precautions**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

**6.3. Methods and material for containment and cleaning up**

Wash with plenty of water.

**6.4. Reference to other sections**

See also section 8 and 13

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## **SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

Avoid contact with skin and eyes, inhalation of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

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

Keep away from food, drink and feed.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

**7.3. Specific end use(s)**

None in particular

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## **SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

No occupational exposure limit available

DNEL Exposure Limit Values

Tetraamminepalladium dichloride - CAS: 13815-17-3

Worker Industry: 190 µg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Industry: 270 mg/kg bw/day - Exposure: Human Dermal - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

Tetraamminepalladium dichloride - CAS: 13815-17-3

Target: Fresh Water - Value: 45 ng/L

Target: Marine water - Value: 4.5 ng/L

Target: Sewage treatment plant - Value: 526 µg/l

Target: Freshwater sediments - Value: 274 µg/kg dw

Target: Marine water sediments - Value: 27.4 µg/kg dw

**8.2. Exposure controls**

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Not needed for normal use.

Thermal Hazards:

None  
Environmental exposure controls:  
None  
Appropriate engineering controls:  
None

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes
Physical state:	Solid	--	--
Colour:	Light yellow	--	--
Odour:	Characteristic	--	--
Melting point/freezing point:	N.A.	--	--
Boiling point or initial boiling point and boiling range:	N.A.	--	--
Flammability:	Non-flammable	--	--
Lower and upper explosion limit:	N.A.	--	--
Flash point:	Not Relevant	--	--
Auto-ignition temperature:	N.A.	--	--
Decomposition temperature:	N.A.	--	--
pH:	N.A.	--	--
Kinematic viscosity:	N.A.	--	--
Solubility in water:	Soluble in ammonia	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient n-octanol/water (log value):	N.A.	--	--
Vapour pressure:	N.A.	--	--
Density and/or relative density:	N.A.	--	--
Relative vapour density:	N.A.	--	--
Particle characteristics:			

Particle size:	N.A.	--	--
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**9.2. Other information**

Properties	Value	Method:	Notes
Miscibility:	N.A.	--	--

## SECTION 10: Stability and reactivity

**10.1. Reactivity**

Stable under normal conditions

**10.2. Chemical stability**

Stable under normal conditions

**10.3. Possibility of hazardous reactions**

None

**10.4. Conditions to avoid**

Stable under normal conditions.

**10.5. Incompatible materials**

None in particular.

**10.6. Hazardous decomposition products**

None.

## SECTION 11: Toxicological information

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Toxicological information of the substance:

Tetraamminepalladium(2+) dichloride - CAS: 13815-17-3

a) acute toxicity

The product is classified: Acute Tox. 4 H302

b) skin corrosion/irritation

Not classified

Based on available data, the classification criteria are not met

c) serious eye damage/irritation

The product is classified: Eye Irrit. 2 H319

d) respiratory or skin sensitisation

The product is classified: Skin Sens. 1 H317

e) germ cell mutagenicity

Not classified

Based on available data, the classification criteria are not met

f) carcinogenicity

Not classified

Based on available data, the classification criteria are not met

g) reproductive toxicity

Not classified

Based on available data, the classification criteria are not met

h) STOT-single exposure

Not classified

Based on available data, the classification criteria are not met

i) STOT-repeated exposure

Not classified

Based on available data, the classification criteria are not met

j) aspiration hazard

Not classified

Based on available data, the classification criteria are not met

**11.2. Information on other hazards**

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration  $\geq 0.1\%$

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**SECTION 12: Ecological information**

**12.1. Toxicity**

Adopt good working practices, so that the product is not released into the environment.

Tetraamminepalladium(2+) dichloride - CAS: 13815-17-3

The product is classified: Aquatic Acute 1 - H400; Aquatic Chronic 1 - H410

**12.2. Persistence and degradability**

N.A.

**12.3. Bioaccumulative potential**

N.A.

**12.4. Mobility in soil**

N.A.

**12.5. Results of PBT and vPvB assessment**

vPvB Substances: None - PBT Substances: None

**12.6. Endocrine disrupting properties**

No endocrine disruptor substances present in concentration  $\geq 0.1\%$

**12.7. Other adverse effects**

None

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**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

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**SECTION 14: Transport information**



**14.1. UN number or ID number**

ADR-UN Number: 3260

IATA-UN Number: 3260

IMDG-UN Number: 3260

**14.2. UN proper shipping name**

ADR-Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.  
(Tetraamminepalladium dichloride)

IATA-Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.  
(Tetraamminepalladium dichloride)

IMDG-Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.  
(Tetraamminepalladium dichloride)

**14.3. Transport hazard class(es)**

ADR-Class: 8

ADR - Hazard identification number: 80

IATA-Class: 8

IATA-Label: 8

IMDG-Class: 8

**14.4. Packing group**

ADR-Packing Group: III

IATA-Packing group:	III
IMDG-Packing group:	III
<b>14.5. Environmental hazards</b>	
ADR-Environmental Pollutant:	Yes
IMDG-Marine pollutant:	Marine Pollutant
Most important toxic component:	Tetraamminepalladium dichloride
IMDG-EmS:	F-A, S-B
<b>14.6. Special precautions for user</b>	
ADR-Subsidiary hazards:	-
ADR-S.P.:	274
ADR-Transport category (Tunnel restriction code):	3 (E)
IATA-Passenger Aircraft:	860
IATA-Subsidiary hazards:	-
IATA-Cargo Aircraft:	864
IATA-S.P.:	A3 A803
IATA-ERG:	8L
IMDG-Subsidiary hazards:	-
IMDG-Stowage and handling:	Category A
IMDG-Segregation:	SGG1 SG36 SG49
<b>14.7. Maritime transport in bulk according to IMO instruments</b>	
N.A.	

## **SECTION 15: Regulatory information**

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

Dir. 98/24/EC (Risks related to chemical agents at work)  
Dir. 2000/39/EC (Occupational exposure limit values)  
Regulation (EC) n. 1907/2006 (REACH)  
Regulation (EC) n. 1272/2008 (CLP)  
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013  
Regulation (EU) n. 2020/878  
Regulation (EU) n. 286/2011 (ATP 2 CLP)  
Regulation (EU) n. 618/2012 (ATP 3 CLP)  
Regulation (EU) n. 487/2013 (ATP 4 CLP)  
Regulation (EU) n. 944/2013 (ATP 5 CLP)  
Regulation (EU) n. 605/2014 (ATP 6 CLP)  
Regulation (EU) n. 2015/1221 (ATP 7 CLP)  
Regulation (EU) n. 2016/918 (ATP 8 CLP)  
Regulation (EU) n. 2016/1179 (ATP 9 CLP)  
Regulation (EU) n. 2017/776 (ATP 10 CLP)  
Regulation (EU) n. 2018/669 (ATP 11 CLP)  
Regulation (EU) n. 2018/1480 (ATP 13 CLP)  
Regulation (EU) n. 2019/521 (ATP 12 CLP)  
Regulation (EU) n. 2020/217 (ATP 14 CLP)  
Regulation (EU) n. 2020/1182 (ATP 15 CLP)  
Regulation (EU) n. 2021/643 (ATP 16 CLP)  
Regulation (EU) n. 2021/849 (ATP 17 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

No restriction.

Restrictions related to the substances contained:

No restriction.

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)



Regulation (EC) nr 648/2004 (detergents).  
Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):  
Seveso III category according to Annex 1, part 1  
Product belongs to category: E1

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for the substance.

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**SECTION 16: Other information**

Full text of phrases referred to in Section 3:

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

<b>Hazard class and hazard category</b>	<b>Code</b>	<b>Description</b>
Met. Corr. 1	2.16/1	Substance or mixture corrosive to metals, Category 1
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
Skin Sens. 1,1A,1B	3.4.2/1-1A-1B	Skin Sensitisation, Category 1,1A,1B
Aquatic Acute 1	4.1/A1	Acute aquatic hazard, category 1
Aquatic Chronic 1	4.1/C1	Chronic (long term) aquatic hazard, category 1

This safety data sheet has been completely updated in compliance to Regulation 2020/878.

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre,  
Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van  
Nostrand Reinold

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It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.