

**Safety Data Sheet dated 15/2/2023, version 6**

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

**1.1. Product identifier**

Mixture identification:

Trade name: D111 - Pd 72 S Solution

Trade code: D111

**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:

info@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

**SECTION 2: Hazards identification**

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

EC regulation criteria 1272/2008 (CLP)

- ⚠ Danger, Skin Corr. 1A, Causes severe skin burns and eye damage.
- ⚠ Danger, Eye Dam. 1, Causes serious eye damage.
- ⚠ Warning, Skin Sens. 1, May cause an allergic skin reaction.
- ⚠ Aquatic Chronic 2, Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

**2.2. Label elements**

Hazard pictograms:



Danger

Hazard statements:

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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P273 Avoid release to the environment.  
P280 Wear protective gloves/clothing and eye/face protection.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER/doctor.  
P391 Collect spillage.

### Special Provisions:

None

### Contains

palladium chloride  
Hydrochloric acid

### 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

N.A.

### 3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
$\geq 10\%$ - $< 12,5\%$	palladium chloride	CAS: 7647-10-1 EC: 231-596-2	$\diamond$ 2.16/1 Met. Corr. 1 H290 $\diamond$ 3.1/4/Oral Acute Tox. 4 H302 $\diamond$ 3.4.2/1 Skin Sens. 1 H317 $\diamond$ 3.3/1 Eye Dam. 1 H318 $\diamond$ 4.1/C1 Aquatic Chronic 1 H410 $\diamond$ 4.1/A1 Aquatic Acute 1 H400
$\geq 3\%$ - $< 5\%$	Hydrochloric acid	Index number: 017-002-00-2 CAS: 7647-01-0 EC: 231-595-7	$\diamond$ 3.8/3 STOT SE 3 H335 $\diamond$ 3.2/1A Skin Corr. 1A H314

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### In case of skin contact:

Immediately take off all contaminated clothing.  
OBTAIN IMMEDIATE MEDICAL ATTENTION.  
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:

Do NOT induce vomiting.

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**

Hydrochloric acid - CAS: 7647-01-0

EU - TWA(8h): 8 mg/m<sup>3</sup>, 5 ppm - STEL: 15 mg/m<sup>3</sup>, 10 ppm

ACGIH - STEL: Ceiling 2 ppm - Notes: A4 - URT irr

DNEL Exposure Limit Values

palladium chloride - CAS: 7647-10-1

Worker Industry: 59.37 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term (repeated)

Worker Industry: 16.84 mg/kg bw/day - Exposure: Human Dermal - Frequency: Long Term (repeated)

PNEC Exposure Limit Values

palladium chloride - CAS: 7647-10-1

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: 0.274 mg/kg dwt

Target: Marine water sediments - Value: 0.0274 mg/kg dwt

**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

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## **SECTION 9: Physical and chemical properties**

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

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Properties	Value	Method:	Notes
Physical state:	Liquid	--	--
Colour:	Dark red	--	--
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:	<2	--	--
Kinematic viscosity:	N.A.	--	--
Solubility in water:	Soluble	--	--
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.	--	--

**9.2. Other information**

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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 product:

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- a) acute toxicity  
Not classified  
Based on available data, the classification criteria are not met
- b) skin corrosion/irritation  
The product is classified: Skin Corr. 1A H314
- c) serious eye damage/irritation  
The product is classified: Eye Dam. 1 H318
- 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

Toxicological information of the main substances found in the product:

palladium chloride - CAS: 7647-10-1

- a) acute toxicity:

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Test: LD50 - Route: Oral - Species: Rat = 576 mg/kg  
Hydrochloric acid - CAS: 7647-01-0  
a) acute toxicity:  
Test: LD50 - Route: Oral - Species: Rat = 258 mg/kg  
Test: LD50 - Route: Skin - Species: Rabbit > 5010 mg/kg  
Test: LC50 - Route: Inhalation - Species: Rat = 1.68 mg/l - Duration: 1h

### 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.

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The product is classified: Aquatic Chronic 2 - H411

palladium chloride - CAS: 7647-10-1

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 154-530  $\mu\text{g/l}$  - Duration h: 96  
Endpoint: LC10 - Species: Fish = 90.4-180  $\mu\text{g/l}$  - Duration h: 96  
Endpoint: NOEC - Species: Fish = 320  $\mu\text{g/l}$  - Duration h: 96  
Endpoint: EC50 - Species: Invertebrates = 21.4-220  $\mu\text{g/l}$  - Duration h: 48  
Endpoint: EC50 - Species: Invertebrates = 180-290  $\mu\text{g/l}$  - Duration h: 24

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Invertebrates = 14.3-102  $\mu\text{g/l}$  - Duration h: 504  
Endpoint: EC10 - Species: Invertebrates = 35.7-84.9  $\mu\text{g/l}$  - Duration h: 504

Hydrochloric acid - CAS: 7647-01-0

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 282 mg/l - Duration h: 96  
Endpoint: EC50 - Species: Daphnia = 56 mg/l - Duration h: 72

### 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



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<b>14.1. UN number or ID number</b>	
ADR-UN Number:	3264
IATA-UN Number:	3264
IMDG-UN Number:	3264
<b>14.2. UN proper shipping name</b>	
ADR-Shipping Name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(palladium chloride, Hydrochloric acid)
IATA-Shipping Name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(palladium chloride, Hydrochloric acid)
IMDG-Shipping Name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(palladium chloride, Hydrochloric acid)
<b>14.3. Transport hazard class(es)</b>	
ADR-Class:	8
ADR - Hazard identification number:	80
IATA-Class:	8
IATA-Label:	8
IMDG-Class:	8
<b>14.4. Packing group</b>	
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:	palladium chloride
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:	852
IATA-Subsidiary hazards:	-
IATA-Cargo Aircraft:	856
IATA-S.P.:	A3 A803
IATA-ERG:	8L
IMDG-Subsidiary hazards:	-
IMDG-Stowage and handling:	Category A SW2
IMDG-Segregation:	SGG1 SG36 SG49
<b>14.7. Maritime transport in bulk according to IMO instruments</b>	
	N.A.

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## 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)



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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:

Restriction 3

Restrictions related to the substances contained:

Restriction 75

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: E2

### 15.2. Chemical safety assessment

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

## SECTION 16: Other information

Full text of phrases referred to in Section 3:

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H410 Very toxic to aquatic life with long lasting effects.

H400 Very toxic to aquatic life.

H335 May cause respiratory irritation.

H314 Causes severe skin burns and eye damage.

Hazard class and hazard category	Code	Description
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
Skin Corr. 1A	3.2/1A	Skin corrosion, Category 1A
Eye Dam. 1	3.3/1	Serious eye damage, Category 1
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1

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STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3
Aquatic Acute 1	4.1/A1	Acute aquatic hazard, category 1
Aquatic Chronic 1	4.1/C1	Chronic (long term) aquatic hazard, category 1
Aquatic Chronic 2	4.1/C2	Chronic (long term) aquatic hazard, category 2

This safety data sheet has been completely updated in compliance to Regulation 2020/878. Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

<b>Classification according to Regulation (EC) Nr. 1272/2008</b>	<b>Classification procedure</b>
Skin Corr. 1A, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
Aquatic Chronic 2, H411	Calculation method

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

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. 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.