

Palladium, standard solution 1000mg/L,  
JUNSEI CHEMICAL CO., LTD.,58255jis\_J\_E1-2,05/Oct/2022

Date of issue for the 1st edition : 26/Apr/2016

Date of revision : 05/Oct/2022

## Safety Data Sheet

### Section 1. Identification of the substance/mixture and of the company/undertaking

#### Product identifier:

Product name: Palladium, standard solution 1000mg/L

Reference number(SDS):58255jis\_J\_E1-2

#### Product type:

Reagent

#### Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

FAX: +81-48-989-2787

e-mail address: shiyaku-t@junsei.co.jp

### Section 2. Hazards identification

#### GHS classification and label elements of the product

#### Classification of the substance or mixture

##### HEALTH HAZARDS

Acute toxicity (Inhalation): Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 1

Respiratory sensitization: Category 1

Specific target organ toxicity – single exposure: Category 2(respiratory system)

Specific target organ toxicity – repeated exposure: Category 2(tooth, respiratory system)

##### ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2

(Note) GHS classification without description: Not classified/Classification not possible

#### Label elements



Signal word: Danger

#### HAZARD STATEMENT

H332-Harmful if inhaled

H315-Causes skin irritation

H318-Causes serious eye damage

H334-May cause allergy or asthma symptoms or breathing difficulties if inhaled

H371-May cause damage to organs

H373-May cause damage to organs through prolonged or repeated exposure

H401-Toxic to aquatic life

#### PRECAUTIONARY STATEMENT

##### Prevention

Avoid release to the environment.

Do not breathe dust/fume/gas/mist/vapors/spray.

In case of inadequate ventilation wear respiratory protection.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

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Wear protective gloves.  
Wear eye protection/face protection.  
Do not eat, drink or smoke when using this product.

#### Response

Get medical advice/attention if you feel unwell.  
Immediately call a POISON CENTER/doctor/physician.  
Call a POISON CENTER/doctor/physician if you feel unwell.  
IF exposed or concerned: Call a POISON CENTER/doctor/physician.  
If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF ON SKIN: Wash with plenty of soap and water.  
If skin irritation occurs: Get medical advice/attention.  
Take off contaminated clothing and wash it before reuse.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### Storage

Store locked up.

#### Disposal

Dispose of contents/container in accordance with local/national regulation.

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### Section 3. Composition/information on ingredients

#### Mixture/Substance selection:

##### Mixture

Ingredient name:Palladium(II) Chloride

Content (%):0.17

Chemical formula:Cl<sub>2</sub>Pd

CAS No.:7647-10-1

MW:177.33

ECNO:231-596-2

Ingredient name:Hydrogen chloride

Content (%):3.5

Chemical formula:ClH

CAS No.:7647-01-0

MW:36.46

ECNO:231-595-7

Ingredient name:Water

Content (%):Residual quantity of the ingredient mentioned above.

Chemical formula:H<sub>2</sub>O

CAS No.:7732-18-5

MW:18.02

ECNO:231-791-2

Note : The figures shown above are not the specifications of the product.

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### Section 4. First-aid measures

#### Descriptions of first-aid measures

##### General measures

Get medical advice/attention if you feel unwell.  
Immediately call a POISON CENTER/doctor/physician.  
Keep victim warm and quiet.  
Call emergency medical service.

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Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.  
Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

#### IF INHALED

Remove person to fresh air and keep comfortable for breathing.  
Give artificial respiration if victim is not breathing.  
Administer oxygen if breathing is difficult.  
If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician.  
Call a POISON CENTER/doctor/physician if you feel unwell.

#### IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.  
Wash with plenty of soap and water.  
If skin irritation or rash occurs: Get medical advice/attention.  
If skin irritation occurs: Get medical advice/attention.  
For minor skin contact, avoid spreading material on unaffected skin.  
Remove and isolate contaminated clothing and shoes.

#### IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/attention.

#### IF SWALLOWED

Rinse mouth.  
Call a POISON CENTER/doctor/physician if you feel unwell.

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### Section 5. Fire-fighting measures

#### Extinguishing media

##### Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.  
The product is non-flammable.

##### Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

#### Specific hazards arising from the substance or mixture

Containers may explode when heated.  
Fire may produce irritating, corrosive and/or toxic gases.  
Runoff from fire control or dilution water may cause pollution.

#### Advice for firefighters

##### Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

##### Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

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### Section 6. Accidental release measures

#### Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.  
In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.  
Ventilate area until material pick up is complete.  
Wear proper protective equipment.

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**PUBLIC SAFETY:** Ventilate closed spaces before entering.

**EVACUATION :** Spill: See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

#### Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

#### Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

#### Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

**ELIMINATE** all ignition sources (no smoking, flares, sparks or flames in immediate area).

Prevent entry into waterways, sewers, basements or confined areas.

Do not get water inside containers.

Keep out of low areas.

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## Section 7. Handling and storage

### Precautions for safe handling

#### Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/mist.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

#### Safety Measures

Use only outdoors or in a well-ventilated area.

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

Use personal protective equipment as required.

When using do not eat, drink or smoke.

#### Any incompatibilities

Bases should not be mixed with the chemicals.

#### Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Take off contaminated clothing and wash it before reuse.

#### Storage

##### Conditions for safe storage

Store in a well-ventilated place. Keep container tightly closed.

Keep cool. Protect from sunlight.

Store in accordance with local/national regulation.

Store locked up.

Container and packaging materials for safe handling data is not available.

#### Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

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**Section 8. Exposure controls/personal protection****Control parameters**

Control value in MHLW is not available.

**Adopted value**

(Hydrogen chloride)

JSOH(2014) (ceiling) 2ppm; 3.0mg/m<sup>3</sup>

ACGIH(2002) STEL: C 2ppm (URT irr)

**Exposure controls****Appropriate engineering controls**

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

**Individual protection measures****Respiratory protection**

Wear respiratory protection.

**Hand protection**

Wear protective gloves.

Inspect before use and replace worn or damaged gloves.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

**Eye protection**

Wear chemical safety goggle.

Wear eye/face protection.

**Skin and body protection**

Wear impervious clothing and boots in case of repeated or prolonged treatment.

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**Section 9. Physical and Chemical Properties****Information on basic physical and chemical properties**

Physical state: Liquid

Color: Pale yellow

Odor data is not available.

Odor threshold data is not available.

Melting point/Freezing point data is not available.

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids): Non-flammable

Lower and upper explosion limit/flammability limit data is not available.

Flash point: Non-flammable

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

pH: Strong acidic

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

**Solubility:**

Solubility in water: Miscible

Solubility in solvent data is not available.

n-Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Vapor density data is not available.

Density and/or relative density data is not available.

Relative vapor density (Air=1) data is not available.

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Relative density of the Vapor/air – mixture at 20°C (Air = 1) data is not available.

Particle characteristics data is not available.

Other information

Critical temperature data is not available.

Evaporation rate data is not available.

VOC data is not available.

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## Section 10. Stability and Reactivity

### Reactivity

Reactivity data is not available.

### Chemical stability

Stable under normal storage/handling conditions.

### Possibility of hazardous reactions

Possibility of hazardous reactions data is not available.

### Conditions to avoid

Contact with incompatible materials.

Heating.

### Incompatible materials

Bases

### Hazardous decomposition products

Palladium oxides, Chlorides

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## Section 11. Toxicological Information

The product has not been subjected to toxicological testing. Refer to the available data on the constituents.

### Information on toxicological effects

#### Acute toxicity

##### Acute toxicity (Oral)

###### [Product]

Classification not possible (Insufficient data available or no data available).

###### [Product data]

No data available.

###### [Data for components of the product]

###### [GHS Cat. Japan, base data]

(Hydrogen chloride)

rat LD50=238mg/kg (SIDS, 2009)

###### [Company proprietary data]

(Palladium(II) Chloride)

rat LD50 =2704 mg/kg (HSDB; chemIDplus)

##### Acute toxicity (Dermal)

###### [Product]

Classification not possible (Insufficient data available or no data available).

###### [Product data]

No data available.

###### [Data for components of the product]

No data available.

##### Acute toxicity (Inhalation)

###### [Product]

Category 4, Harmful if inhaled

###### [Product data]

No data available.

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[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrogen chloride)

mist: rat LC50=0.42mg/L/4hr (SIDS, 2009)

Labor standard law, Japan; Toxic

Hydrogen chloride

Irritant properties

Skin corrosion/irritation

[Product]

Category 2, Causes skin irritation

[Product data]

No data available.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrogen chloride)

rabbit/mouse/rat/human : corrosive (SIDS, 2009)

Serious eye damage/irritation

[Product]

Category 1, Causes serious eye damage

[Product data]

No data available.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrogen chloride)

rabbit : corrosive (SIDS, 2002)

Sensitization

Respiratory sensitization

[Product]

Category 1, May cause allergy or asthma symptoms or breathing difficulties if inhaled

[Product data]

No data available.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrogen chloride)

cat. 1; Occupational/Environmental Allergy Society, Japan

Skin sensitization

[Product]

Classification not possible (Insufficient data available or no data available).

[Product data]

No data available.

[Data for components of the product]

No data available.

Germ cell mutagenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Product data]

No data available.

[Data for components of the product]

No data available.

Carcinogenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Product data]

No data available.

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[Data for components of the product]

[IARC]

(Hydrogen chloride)

Group 3 : Not classifiable as to its carcinogenicity to humans

[ACGIH]

(Hydrogen chloride)

A4(2002) : Not Classifiable as a Human Carcinogen

Reproductive toxicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Product data]

No data available.

[Data for components of the product]

No data available.

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]

Category 2, May cause damage to organs

[Product data]

No data available.

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Hydrogen chloride)

respiratory system (ACGIH, 2003)

STOT-repeated exposure

[Product]

Category 2, May cause damage to organs through prolonged or repeated exposure

[Product data]

No data available.

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Hydrogen chloride)

teeth, respiratory system (SIDS, 2002)

Aspiration hazard

[Product]

Classification not possible (Insufficient data available or no data available).

[Product data]

No data available.

[Data for components of the product]

No data available.

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## Section 12. Ecological Information

The product has not been subjected to ecotoxicological testing. Refer to the available data on the constituents.

Toxicity

Aquatic toxicity

[Product]

Category 2, Toxic to aquatic life

[Product data]

No data available.



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[Data for components of the product]

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Hydrogen chloride)

Crustacea (Daphnia magna) EC50=0.492mg/L/48hr (SIDS, 2005)

Water solubility

[Data for components of the product]

(Hydrogen chloride)

67 g/100 ml (30°C) (ICSC, 2000)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

[Data for components of the product]

(Hydrogen chloride)

log Pow=0.25 (ICSC, 2000)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

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### Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment.

Dispose of contents/container in accordance with local/national regulation.

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### Section 14. Transport Information

UN No., UN CLASS

UN No. or ID No.: 1789

UN Proper Shipping Name : HYDROCHLOMIC ACID

Class or division (Transport hazard class) : 8

Packing group : III

ERG GUIDE No.: 157

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1789

Proper Shipping Name : HYDROCHLOMIC ACID

Class or division : 8

Packing group : III

IATA Dangerous Goods Regulations

UN No.: 1789

Proper Shipping Name : HYDROCHLOMIC ACID

Class or division : 8

Hazard labels : Corrosive

Packing group : III

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Z

Hydrogen chloride(Z-33)

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Non Noxious Liquid ; Cat. OS  
Water(OS-18)

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#### Section 15. Regulatory Information

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

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

7647-01-0; 7647-10-1; 7732-18-5

All components are listed or exempted.

Superfund Amendments and Reauthorizations Act (SARA), Title III

SARA 313 (TRI)

Hydrogen chloride

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

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#### Section 16. Other information

GHS classification and labelling

H332-Acute toxicity, Category 4: H332 Harmful if inhaled

H315-Skin corrosion/irritation, Category 2: H315 Causes skin irritation

H318-Serious eye damage/eye irritation, Category 1: H318 Causes serious eye damage

H334-Respiratory sensitization, Category 1: H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

H371-STOT - single exposure, Category 2: H371 May cause damage to organs

H373-STOT - Repeated exposure, Category 2: H373 May cause damage to organs through prolonged or repeated exposure

H401-Hazardous to the aquatic environment, short-term (acute), Category 2: H401 Toxic to aquatic life

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2022 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2021 Recommendation on TLVs (JISOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.19 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

([https://www.nite.go.jp/en/chem/chrip/chrip\\_search/systemTop](https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop))

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

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#### Abbreviations and acronyms

SDS (Safety Data Sheet)  
LD50 (Lethal Dose, 50%)  
LC50 (Lethal Concentration, 50%)  
IARC (International Agency for Research on Cancer)  
ACGIH (American Conference of Governmental Industrial Hygienists)  
EPA (US Environmental Protection Agency)  
NTP (US National Toxicology Program)  
JSOH (Japan Society for Occupational Health)  
EU (European Union)  
EC50 (Effective Concentration, 50%)  
NOEC (No Observed Effect Concentration)  
BOD (Biochemical Oxygen Demand)  
COD (Chemical Oxygen Demand)  
BCF (Bioconcentration Factor)  
anh (anhydride)

#### General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2021).