

## SAFETY DATA SHEET

According to JIS Z 7253:2019  
**Revision Date** 01-Apr-2021  
 Version 1.06

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

<b>Product name</b>	Pd/C(en) (Pd 5%)(wetted with water)
<b>Product code</b>	160-27311,168-27312,166-27313

<b>Manufacturer</b>	FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-5964
<b>Supplier</b>	FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-2029
<b>Emergency telephone number</b>	+81-6-6203-3741 / +81-3-3270-8571
<b>Recommended uses and restrictions on use</b>	For research use only

## Section 2: HAZARDS IDENTIFICATION

## GHS classification

Classification of the substance or mixture

<b>Skin corrosion/irritation</b>	Category 2
<b>Serious eye damage/eye irritation</b>	Category 2A
<b>Respiratory sensitization</b>	Category 1
<b>Skin sensitization</b>	Category 1
<b>Reproductive Toxicity</b>	Category 2
<b>Specific target organ toxicity (single exposure)</b>	Category 2
Category 2 respiratory system	

## Pictograms



**Signal word** Danger

## Hazard statements

- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H361 - Suspected of damaging fertility or the unborn child
- H317 - May cause an allergic skin reaction
- H371 - May cause damage to the following organs: respiratory system

## Precautionary statements-(Prevention)

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required.
- Wash face, hands and any exposed skin thoroughly after handling
- In case of inadequate ventilation wear respiratory protection

- Contaminated work clothing should not be allowed out of the workplace
- Protective gloves
- Do not breathe dust/fume/gas/mist/vapors/spray
- Do not eat, drink or smoke when using this product

**Precautionary statements-(Response)**

- IF exposed or concerned: Get medical advice/attention
- 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 ON SKIN: Wash with plenty of soap and water
- Take off contaminated clothing and wash before reuse
- If skin irritation or rash occurs: Get medical advice/attention
- IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
- If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

**Precautionary statements-(Storage)**

- Store locked up.

**Precautionary statements-(Disposal)**

- Dispose of contents/container to an approved waste disposal plant

**Others**

**Other hazards** Not available

**Section 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**Single Substance or Mixture** Mixture

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Pd/C(en) (Pd 5%)	5 (as Pd)	N/A	N/A	N/A	N/A
Water	50 - 60	18.02	N/A	N/A	7732-18-5
Ethylenediamine	3.9 - 7.3	60.10	(2)-150	公表	107-15-3

**Impurities and/or Additives :** Water

**Section 4: FIRST AID MEASURES****Inhalation**

Remove to fresh air. If symptoms persist, call a physician.

**Skin contact**

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

**Eye contact**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

**Ingestion**

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

**Protection of first-aiders**

Use personal protective equipment as required.

**Section 5: FIRE FIGHTING MEASURES****Suitable extinguishing media**

Water spray (fog), Carbon dioxide (CO<sub>2</sub>), Foam, Extinguishing powder, Sand

**Unsuitable extinguishing media**

No information available

**Specific hazards arising from the chemical product**

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**Special extinguishing method**

No information available

**Special protective actions for**

**fire-fighters**

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

## Section 6: ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

**Environmental precautions**

To be careful not discharged to the environment without being properly handled waste water contaminated.

**Methods and materials for contaminant and methods and materials for cleaning up**

Sweep up and gather scattered particles, and collect it in an empty airtight container.

**Recovery, neutralization**

No information available

**Secondary disaster prevention measures**

Clean contaminated objects and areas thoroughly observing environmental regulations.

## Section 7: HANDLING AND STORAGE

**Handling****Technical measures**

Avoid contact with strong oxidizing agents. Use with local exhaust ventilation.

**Precautions**

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

**Safety handling precautions**

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

**Storage****Safe storage conditions****Storage conditions**

Keep container protect from light tightly closed. Store in a cool (2-10 °C) place. Packed with an inert gas.

**Safe packaging material**

Glass

**Incompatible substances**

Strong oxidizing agents

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering controls**

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

**Exposure limits**

Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
Carbon 7440-44-0	0.5mg/m <sup>3</sup>	2.9mg/m <sup>3</sup>	2mg/m <sup>3</sup>
Ethylenediamine 107-15-3	TWA: 10 ppm OEL TWA: 25 mg/m <sup>3</sup> OEL Skin	N/A	TWA: 10 ppm Skin

**Personal protective equipment****Respiratory protection**

Dust mask

**Hand protection**

Protection gloves

**Eye protection**

protective eyeglasses or chemical safety goggles

**Skin and body protection**

Long-sleeved work clothes

**General hygiene considerations**

Handle in accordance with good industrial hygiene and safety practice.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Form</b>	
<b>Color</b>	black
<b>Appearance</b>	powder
<b>Odor</b>	No data available
<b>Melting point/freezing point</b>	No data available
<b>Boiling point, initial boiling point and boiling range</b>	No data available
<b>Flammability</b>	No data available
<b>Evaporation rate:</b>	No data available
<b>Flammability (solid, gas):</b>	No data available
<b>Upper/lower flammability or explosive limits</b>	
<b>Upper :</b>	No data available
<b>Lower :</b>	No data available
<b>Flash point</b>	No data available
<b>Auto-ignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>pH</b>	No data available
<b>Viscosity (coefficient of viscosity)</b>	No data available
<b>Dynamic viscosity</b>	No data available
<b>Solubilities</b>	No data available
<b>n-Octanol/water partition coefficient:(log Pow)</b>	No data available
<b>Vapour pressure</b>	No data available
<b>Specific Gravity / Relative density</b>	No data available
<b>Vapour density</b>	No data available
<b>Particle characteristics</b>	No data available

## Section 10: STABILITY AND REACTIVITY

### Stability

<b>Reactivity</b>	No data available
<b>Chemical stability</b>	May be altered by light.
<b>Hazardous reactions</b>	None under normal processing
<b>Conditions to avoid</b>	Extremes of temperature and direct sunlight
<b>Incompatible materials</b>	Strong oxidizing agents
<b>Hazardous decomposition products</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Nitrogen oxides (NO <sub>x</sub> )

## Section 11: TOXICOLOGICAL INFORMATION

Described about residual hazardous components.

### Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Carbon	> 10000 mg/kg ( Rat )	N/A	N/A
Ethylenediamine	637 mg/kg ( Rat )	560 mg/kg ( Rabbit )	5656 ppm ( rat ) 4h

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas-source information
Ethylenediamine	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust-source information	Acute toxicity -inhalation mist-source information
---------------	--	--	--

Ethylenediamine	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
-----------------	---	---	---

**Skin irritation/corrosion**

Chemical Name	Skin corrosion/irritation source information
Ethylenediamine	Based on the NITE GHS classification results.

**Serious eye damage/ irritation**

Chemical Name	Serious eye damage/irritation source information
Ethylenediamine	Based on the NITE GHS classification results.

**Respiratory or skin sensitization**

Chemical Name	Respiratory or Skin sensitization source information
Ethylenediamine	Based on the NITE GHS classification results.

**Reproductive cell mutagenicity**

Chemical Name	germ cell mutagenicity source information
Ethylenediamine	Based on the NITE GHS classification results.

**Carcinogenicity**

Chemical Name	Carcinogenicity source information
Ethylenediamine	Based on the NITE GHS classification results.

**Reproductive toxicity**

Chemical Name	Reproductive toxicity source information
Ethylenediamine	Based on the NITE GHS classification results.

**STOT-single exposure**

Chemical Name	STOT -single exposure- source information
Ethylenediamine	Based on the NITE GHS classification results.

**STOT-repeated exposure**

Chemical Name	STOT -repeated exposure- source information
Ethylenediamine	Based on the NITE GHS classification results.

**Aspiration hazard**

Chemical Name	Aspiration Hazard source information
Ethylenediamine	Based on the NITE GHS classification results.

## Section 12: ECOLOGICAL INFORMATION

Described about residual hazardous components.

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Ethylenediamine	<i>EC50:Pseudokirchneriella subcapitata</i> 151 mg/L 96 h <i>EC50:Pseudokirchneriella subcapitata</i> 645 mg/L 72 h	<i>LC50:Pimephales promelas</i> 115.7 mg/L 96 h	<i>EC50: Daphnia magna</i> 3.0 mg/L 48 h

**Other data**

Chemical Name	Short-term (acute) hazardous to the aquatic environment source information	Long-term (chronic) hazardous to the aquatic environment source information
Ethylenediamine	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available
<b>Mobility in soil</b>	No information available
<b>Hazard to the ozone layer</b>	No information available
<b>Mobility</b>	

## Section 13: DISPOSAL CONSIDERATIONS

**Waste from residues**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated container and contaminated packaging**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

<b>Section 14: TRANSPORT INFORMATION</b>
--

<b>ADR/RID</b>	Not regulated
UN number	-
Proper shipping name:	
UN classification	
Subsidiary hazard class	
Packing group	
Marine pollutant	Not applicable
<b>IMDG</b>	Not regulated
UN number	-
Proper shipping name:	
UN classification	
Subsidiary hazard class	
Packing group	
Marine pollutant (Sea)	Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available
<b>IATA</b>	Not regulated
UN number	-
Proper shipping name:	
UN classification	
Subsidiary hazard class	
Packing group	
Environmentally Hazardous Substance	Not applicable

<b>Section 15: REGULATORY INFORMATION</b>
---

International Inventories

EINECS/ELINCS	-
TSCA	-

Japanese regulations

Fire Service Act	Not applicable
Poisonous and Deleterious Substances Control Law	Not applicable
Industrial Safety and Health Act	Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9)No.83
Regulations for the carriage and storage of dangerous goods in ship	Not applicable
Civil Aeronautics Law	Not applicable
Marine Pollution Prevention Law	Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Y
Pollutant Release and Transfer Register Law	Class 1
Class 1 - No.	59
Export Trade Control Order	Not applicable
Air Pollution Control Law	Hazardous Air Pollutants

Chemical Name	Poisonous and Deleterious Substances Control Law	Industrial Safety and Health Act Substances (Law Art.57-2)	Pollutant Release and Transfer Register Law
Ethylenediamine 107-15-3 ( 3.9 - 7.3 )	-	Applicable	Applicable

### Section 16: OTHER INFORMATION

#### Key literature references and sources for data etc.

NITE: National Institute of Technology and Evaluation (JAPAN)  
<http://www.safe.nite.go.jp/japan/db.html>  
 IATA dangerous Goods Regulations  
 RTECS:Registry of Toxic Effects of Chemical Substances  
 Japan Industrial Safety and Health Association GHS Model SDS  
 Dictionary of Synthetic Organic Chemistry , SSOCJ, Koudansha Scientific Co.Ltd.  
 Chemical Dictionary, Kyouritsu Publishing Co., Ltd.  
 etc

#### Disclaimer

This SDS is according to JIS Z 7253: 2019. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

GHS Classification is according to JIS Z7252(2019). \*JIS: Japanese Industrial Standards

**End of Safety Data Sheet**