

SAFETY DATA SHEET

Issue Date 08-May-2025
Revision Number 1.08

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Pd/C(en) (Pd 10%)(wetted with water)
Other means of identification
Product Code(s) 165-27621,161-27623

Recommended use of the chemical and restrictions on use

Recommended Use For research use only.
Uses advised against Seek expert judgment when using for purposes other than those recommended.

Details of the supplier of the safety data sheet**Manufacturer Address**

FUJIFILM Wako Pure Chemical Corporation
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Distributor

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2. HAZARDS IDENTIFICATION

GHS classification**Classification of the substance or mixture**

| | |
|---|------------|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Respiratory sensitization | Category 1 |
| Skin sensitization | Category 1 |
| Reproductive Toxicity | Category 2 |
| Specific target organ toxicity (single exposure) | Category 1 |
| Category 1 respiratory system | |
| Specific target organ toxicity (repeated exposure) | Category 2 |
| Category 2 liver, kidneys, Visual organ | |
| Acute aquatic toxicity | Category 3 |

Pictograms**Signal word**

Danger

Hazard statements

H315 - Causes skin irritation
H318 - Causes serious eye damage
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
H402 - Harmful to aquatic life
H370 - Causes damage to the following organs: respiratory system
H373 - May cause damage to the following organs through prolonged or repeated exposure: liver, kidneys, Visual organ

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 Wear protective gloves Do not breathe dust/fume/gas/mist/vapors/spray Do not eat, drink or smoke when using this product Avoid release to the environment

Precautionary statements-(Response)

IF exposed: Call a POISON CENTER or doctor/physician
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor/physician
 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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Mixture

| Chemical Name | Molecular weight | CAS RN | Weight-% |
|-----------------|------------------|-----------|-----------|
| Water | 18.02 | 7732-18-5 | 45 - 60 |
| Carbon | 12.011 | 7440-44-0 | 41 |
| Palladium | 106.42 | 7440-05-3 | 5.1 |
| Ethylenediamine | 60.10 | 107-15-3 | 1.0 - 5.0 |

Impurities and/or Additives: Stabilizer: water 45 - 60 %

4. FIRST AID MEASURES

First aid measures

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Inhalation Remove to fresh air.

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.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards arising from the chemical

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

Explosion data

Sensitivity to Mechanical none.

Impact

Sensitivity to Static Discharge none.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods and material for containment and cleaning up Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical measures Avoid contact with strong oxidizing agents.

Protective measures Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

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

Packaging materials Glass.

Incompatible materials Strong oxidizing agents.

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 | ACGIH | OSHA PEL | NIOSH IDLH |
|----------------------|--------------------|-----------------|-------------------|
| Carbon 7440-44-0 | 2mg/m ³ | N/A | N/A |
| Ethylenediamine | TWA: 10 ppm | TWA: 10 ppm | IDLH: 1000 ppm |

| | | | |
|----------|------|---|--|
| 107-15-3 | Skin | TWA: 25 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m ³ | TWA: 10 ppm TWA: 25 mg/m ³ |
|----------|------|---|--|

Personal protective equipment**Respiratory protection**

Dust mask (JIS T 8151)

Hand protection

chemical protective gloves (JIS T 8116)

Eye protection

protective eyeglasses or chemical safety goggles (JIS T 8147)

Skin and body protection

Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form**Color**

black

Appearance

powder

Odor

no data available

pH

no data available

Melting point/freezing point

no data available

Boiling point, initial boiling point and boiling range

no data available

Flash point

no data available

Evaporation rate:

no data available

Flammability (solid, gas):

no data available

Upper/lower flammability or explosive limits**Upper:**

no data available

Lower:

no data available

Vapour pressure

no data available

Vapour density

no data available

Specific Gravity / Relative density

no data available

Solubilities**n-Octanol/water partition coefficient:(log Pow)**

no data available

Auto-ignition temperature:

no data available

Decomposition temperature:

no data available

Viscosity (coefficient of viscosity)

no data available

Dynamic viscosity

no data available

Particle characteristics

no data available

10. STABILITY AND REACTIVITY

Stability**Chemical stability**

May be altered by light.

Reactivity

no data available

Hazardous reactions

None under normal processing

Conditions to avoid

Extremes of temperature and direct sunlight

Incompatible materials

Strong oxidizing agents

Hazardous decomposition productsCarbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Metal oxides

11. TOXICOLOGICAL INFORMATION

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) 4 h |

| 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. |

12. ECOLOGICAL INFORMATION

Ecotoxicity

| Chemical Name | Algae/aquatic plants | Fish | Toxicity to microorganisms | Crustacea |
|-----------------------------|--|---|----------------------------|---------------------------------------|
| Ethylenediamine 107-15-3 | EC50 : Pseudokirchneriella subcapitata 151 mg/L 96 h EC50 : Pseudokirchneriella subcapitata 645 mg/L 72 h | LC50 : Pimephales promelas 115.7 mg/L 96 h | N/A | EC50 : Daphnia magna 3.0 mg/L 48 h |

Persistence and degradability

No information available

Bioaccumulative potential

No information available

Mobility

| Chemical Name | Partition coefficient |
|-----------------------------|-----------------------|
| Ethylenediamine 107-15-3 | -1.221 |

Mobility in soil

No information available

Other Data

No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment methods****Disposal of wastes**

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

Precautionary including method of disposing contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION**DOT**

Not regulated

UN/ID No

Not applicable

Proper shipping name:

UN classification

Subsidiary hazard class

Packing group

Marine pollutant

Not applicable

IATA

Not regulated

UN/ID No

-

Proper shipping name:

UN classification

Subsidiary hazard class

Packing group

Environmentally Hazardous
Substance

Not applicable

IMDG

Not regulated

UN/ID No

-

Proper shipping name:

UN classification

Subsidiary hazard class

Packing group

Marine pollutant (Sea)

Not applicable

15. REGULATORY INFORMATION**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part

372

| Chemical Name | CAS RN | Weight-% | SARA 313 - Threshold Values % |
|----------------------------|-----------|-----------|-------------------------------|
| Water - 7732-18-5 | 7732-18-5 | 45 - 60 | N/A |
| Carbon - 7440-44-0 | 7440-44-0 | 41 | N/A |
| Palladium - 7440-05-3 | 7440-05-3 | 5.1 | N/A |
| Ethylenediamine - 107-15-3 | 107-15-3 | 1.0 - 5.0 | N/A |

SARA 311/312 Hazard Categories

| | |
|-----------------------------------|----|
| Acute health hazard | No |
| Chronic Health Hazard | No |
| Fire hazard | No |
| Sudden release of pressure hazard | No |
| Reactive Hazard | No |

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|-----------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Ethylenediamine 107-15-3 | 5000 lb | N/A | N/A | X |

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Chemical Name | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ) |
|-----------------------------|--------------------------|----------------|--|
| Ethylenediamine 107-15-3 | 5000 lb | 5000 lb | RQ 5000 lb final RQ RQ 2270 kg final RQ |

US State Regulations**California Proposition 65**

This product does not contain any chemicals regulated by Proposition 65

U.S. State Right-to-Know Regulations

| Chemical Name | New Jersey | Massachusetts | Pennsylvania |
|-----------------------------|------------|---------------|--------------|
| Water 7732-18-5 | N/A | N/A | X |
| Ethylenediamine 107-15-3 | X | X | X |

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Issue Date 02-May-2025

Issue Date 08-May-2025

Revision Note

No information available

Disclaimer

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, use, processing, storage, transportation, disposal and release 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.

End of Safety Data Sheet