

## SAFETY DATA SHEET

According to JIS Z 7253:2019  
Revision date 23-May-2023  
Revision Number 1.02

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

|              |                                 |
|--------------|---------------------------------|
| Product Name | 1,2,2,6,6-Pentamethylpiperidine |
| Product Code | 353-45501,351-45502             |

|                            |                                                                                                                                                       |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer               | FUJIFILM Wako Pure Chemical Corporation<br>1-2 Doshomachi 3-Chome<br>Chuo-ku, Osaka 540-8605, Japan<br>Phone: +81-6-6203-3741<br>Fax: +81-6-6203-5964 |
| Supplier                   | FUJIFILM Wako Pure Chemical Corporation<br>1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan<br>Phone: +81-6-6203-3741<br>Fax: +81-6-6203-2029   |
| Emergency telephone number | +81-6-6203-3741 / +81-3-3270-8571                                                                                                                     |
| Recommended uses           | For research use only                                                                                                                                 |
| Restrictions on use        | Seek expert judgment when using for purposes other than those recommended.                                                                            |

## Section 2: HAZARDS IDENTIFICATION

## GHS classification

Classification of the substance or mixture

## Flammable liquids

## Acute toxicity - Oral

## Skin corrosion/irritation

## Serious eye damage/eye irritation

## Specific target organ toxicity (single exposure)

Category 3 Respiratory irritation

Category 3

Category 3

Category 2

Category 2A

Category 3

## Pictograms



## Signal word

Danger

## Hazard statements

- H226 - Flammable liquid and vapour
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H301 - Toxic if swallowed
- H335 - May cause respiratory irritation

## Precautionary statements-(Prevention)

- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Wear protective gloves/protective clothing/eye protection/face protection
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

- Keep container tightly closed
- Ground/bond container and receiving equipment
- Use explosion-proof electrical/ ventilating / lighting / equipment
- Use only non-sparking tools
- Take precautionary measures against static discharge
- Keep cool

**Precautionary statements-(Response)**

- 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 skin irritation occurs: Get medical advice/attention
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- Wash contaminated clothing before reuse
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- Call a POISON CENTER or doctor/physician if you feel unwell
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- Rinse mouth
- In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Precautionary statements-(Storage)**

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

**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** Substance

**Formula** C<sub>10</sub>H<sub>21</sub>N

| Chemical Name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS RN  |
|---------------|----------|------------------|------|----------|---------|
| Pempidine     | 96       | 155.28           | N/A  | N/A      | 79-55-0 |

**Note on ISHL No.:** \* in the table means announced chemical substances.

**Impurities and/or Additives:** Not applicable

### 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. Vapors may form explosive mixtures with air

**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**

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

**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**

Highly flammable. Avoid contact with high temperature objects, spark, and 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**

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

**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**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Personal protective equipment**

|                                 |                                                  |
|---------------------------------|--------------------------------------------------|
| <b>Respiratory protection</b>   | gas mask for organic gas ( JIS T 8152 )          |
| <b>Hand protection</b>          | chemical protective gloves ( JIS T 8116 )        |
| <b>Eye protection</b>           | protective eyeglasses or chemical safety goggles |
| <b>Skin and body protection</b> | Long-sleeved work clothes                        |

**General hygiene considerations**

Handle in accordance with good industrial hygiene and safety practice.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

**Form**

|                                                               |                                                          |
|---------------------------------------------------------------|----------------------------------------------------------|
| <b>Color</b>                                                  | Colorless - brown                                        |
| <b>Appearance</b>                                             | liquid                                                   |
| <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>                                           | Flammable liquid and vapor                               |
| <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>                                           | ethanol, acetone : miscible . water : slightly soluble . |
| <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>                    | 0.859 g/mL                                               |
| <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, Heat, flames and sparks, static electricity, spark |
| <b>Incompatible materials</b>           | Strong oxidizing agents                                                                         |
| <b>Hazardous decomposition products</b> | Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2)                               |

## Section 11: TOXICOLOGICAL INFORMATION

**Acute toxicity**

| Chemical Name | Oral LD50        | Dermal LD50 | Inhalation LC50 |
|---------------|------------------|-------------|-----------------|
| Pempidine     | 275 mg/kg(mouse) | N/A         | N/A             |

|                                       |                   |
|---------------------------------------|-------------------|
| <b>Skin irritation/corrosion</b>      | no data available |
| <b>Serious eye damage/ irritation</b> | no data available |

|                                   |                   |
|-----------------------------------|-------------------|
| Respiratory or skin sensitization | no data available |
| Reproductive cell mutagenicity    | no data available |
| Carcinogenicity                   | no data available |
| Reproductive toxicity             | no data available |
| STOT-single exposure              | no data available |
| STOT-repeated exposure            | no data available |
| Aspiration hazard                 | no data available |

## Section 12: ECOLOGICAL INFORMATION

|                               |                          |
|-------------------------------|--------------------------|
| Ecotoxicity                   | No information available |
| Other data                    | no data available        |
| Persistence and degradability | No information available |
| Bioaccumulative potential     | No information available |
| Mobility in soil              | No information available |
| Hazard to the ozone layer     | No information available |

## 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.

## Section 14: TRANSPORT INFORMATION

### ADR/RID

|                         |                                             |
|-------------------------|---------------------------------------------|
| UN number               | UN1992                                      |
| Proper shipping name:   | Flammable liquid, toxic, n.o.s. (Pempidine) |
| UN classification       | 3                                           |
| Subsidiary hazard class | 6.1                                         |
| Packing group           | III                                         |
| Marine pollutant        | Not applicable                              |

### IMDG

|                                                                          |                                             |
|--------------------------------------------------------------------------|---------------------------------------------|
| UN number                                                                | UN1992                                      |
| Proper shipping name:                                                    | Flammable liquid, toxic, n.o.s. (Pempidine) |
| UN classification                                                        | 3                                           |
| Subsidiary hazard class                                                  | 6.1                                         |
| Packing group                                                            | III                                         |
| Marine pollutant (Sea)                                                   | Not applicable                              |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | No information available                    |

### IATA

|                                     |                                             |
|-------------------------------------|---------------------------------------------|
| UN number                           | UN1992                                      |
| Proper shipping name:               | Flammable liquid, toxic, n.o.s. (Pempidine) |
| UN classification                   | 3                                           |
| Subsidiary hazard class             | 6.1                                         |
| Packing group                       | III                                         |
| Environmentally Hazardous Substance | Not applicable                              |

## Section 15: REGULATORY INFORMATION

**International Inventories**

|               |        |
|---------------|--------|
| EINECS/ELINCS | Listed |
| TSCA          | Listed |

**Japanese regulations**

|                                                                     |                                                                                                                                     |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Fire Service Act                                                    | Category IV, Class II petroleum, dangerous grade 3                                                                                  |
| Poisonous and Deleterious Substances Control Law                    | Not applicable                                                                                                                      |
| Industrial Safety and Health Act                                    | Dangerous Substances - Flammable Substance (Enforcement Order Attached Table 1 Item 4)                                              |
| Regulations for the carriage and storage of dangerous goods in ship | Flammable Liquids (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1) |
| Civil Aeronautics Law                                               | Flammable Liquids (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1)                |
| Pollutant Release and Transfer Register Law (2023.4.1-)             | Not applicable                                                                                                                      |
| Export Trade Control Order                                          | Not applicable                                                                                                                      |

|                                      |
|--------------------------------------|
| <b>Section 16: OTHER INFORMATION</b> |
|--------------------------------------|

**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

**Record of SDS revisions**

The following contents were revised. Product and company Identification. Exposure controls/personal protection. Regulatory information.

**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 Z 7252:2019. \*JIS: Japanese Industrial Standards

**End of Safety Data Sheet**