



## Safety Data Sheet

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

Product identifier:

Product name: Piperidine

SDS No. : 6258E-3

Relevant identified uses of the substance or mixture and uses advised against

Research and Development

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Chemical Safety Management Department

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

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### Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable liquids: Category 2

HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Acute toxicity (Dermal): Category 3

Acute toxicity (Inhalation): Category 3

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Reproductive toxicity: Category 2

Specific target organ toxicity – single exposure: Category 1 (central nervous system)

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H225 Highly flammable liquid and vapor

H302 Harmful if swallowed

H311 Toxic in contact with skin

H331 Toxic if inhaled

H314 Causes severe skin burns and eye damage

H361 Suspected of damaging fertility or the unborn child

H370 Causes damage to organs (central nervous system)

PRECAUTIONARY STATEMENT

Prevention

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No



smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P271 Use only outdoors or in a well-ventilated area.

P264 Wash contaminated parts thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P280 Use personal protective equipment as required.

P270 Do not eat, drink or smoke when using this product.

#### Response

P370 + P378 In case of fire: Use appropriate media to extinguish.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P310 Immediately call a POISON CENTER/doctor/physician.

P311 Call a POISON CENTER/doctor/physician.

P312 Call a POISON CENTER/doctor/physician if you feel unwell.

P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.

Rinse skin with water or shower.

P363 Wash contaminated clothing before reuse.

P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P330 IF SWALLOWED: Rinse mouth.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

#### Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

#### Disposal

P501 Dispose of contents/container in accordance with local/national regulation.

#### Specific adverse human health effects

See "11. Toxicological Information".

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### Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name	Content (%)	CAS No.	Chemicals No, Japan	Chemical formula
Piperidine	99(min)	110-89-4	5-765	C5H11N

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

IF exposed or concerned: Get medical advice/attention.

**IF INHALED**

Remove person to fresh air and keep comfortable for breathing.

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

**IF ON SKIN**

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 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.

Do NOT induce vomiting.

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.

In case of fire, use spraying loaded liquid, foam (water-soluble liquid: alcohol-resistant foam), inactive gases, dry powder, dry sand to extinguish.

\*Fire Service Act Group 4 Hazardous Materials

## Unsuitable extinguishing media

Indoor Fire Plug System or Outdoor Fire Plug System

Sprinkler System

Dry Chemical Extinguishing System—Others (except for phosphates etc., Hydrogen Carbonates etc.)

Fire Extinguisher Discharging Jet Water/Spraying Water

Fire Extinguisher Discharging Jet Loaded Liquid

Fire Extinguisher Discharging Dry Extinguishing agents—Others (except for phosphates etc., Hydrogen Carbonates etc.)

Water Bucket or Water Tank

\*Cabinet Order Concerning the Control of Hazardous Materials (Attached Table 5) Group 4 Hazardous Materials

## Specific hazards arising from the substance or mixture

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

See "10.Stability and Reactivity".

## 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 a full facepiece operated in the positive pressure mode.

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**Section 6. Accidental release measures**

Personnel precautions, protective equipment and emergency procedures

- Keep unauthorized personnel away.
- Ventilate area until material pick up is complete.
- Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

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.

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**Section 7. Handling and storage**

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

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

(Protective measures against fire and explosion)

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

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use non-sparking tools.

Take action to prevent static discharges.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Do not handle until all safety precautions have been read and understood.

Use only outdoors or in a well-ventilated area.

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

Wash hands et al thoroughly after handling.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity".

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

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

Take off immediately all contaminated clothing and wash it before reuse.

Storage

**Conditions for safe storage**

- Keep container tightly closed.
- Store locked up. (P405)
- Store in a cool, dry place. Do not store in direct sunlight.
- Storage in accordance with local/national regulation.

**Container and packaging materials for safe handling**

- Use closed unbreakable containers.

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

- Adopted value in ACGIH is not available.

**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**

- Recommend to use protective equipment in conformity with the standards.

**Respiratory protection**

- Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge corresponding to type of gases when using a gas mask.

**Hand protection**

- Wear impervious protective glove.

**Eye protection**

- Wear eye/face protection. Wear safety goggles in cases gas is generated.

**Skin and body protection**

- Wear protective clothing.

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

Physical state: Liquid

Color: Colorless

Odor: Characteristic odour

Melting point/Freezing point: -7°C

Boiling point or initial boiling point: (Piperidine)106°C

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

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

Flash point: (Piperidine)(C.C.) 16°C

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH 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: log Pow0.84



Vapor pressure: 5.3 kPa (29.2°C)  
Density and/or relative density: 0.86  
Relative vapor density (Air=1): 3  
Relative density of the Vapor/air – mixture at 20°C (Air = 1): 1.1  
Particle characteristics data is not available.

Other information

Other information is not available.

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**Section 10. Stability and Reactivity**

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

The vapour is heavier than air and may travel along the ground; distant ignition possible.  
Decomposes on burning. This produces toxic fumes including nitrogen oxides. The substance is a medium strong base. Reacts violently with oxidants. Reacts violently with dicyanofurazan, N-nitrosoacetanilide and 1-perchloryl-piperidine. This generates explosion hazard. (ICSC 0317)

Conditions to avoid

Contact with incompatible materials.  
Contact with fire source.

Incompatible materials

Oxidizing agents, Dicyanofurazan, N-Nitrosoacetanilide, 1-Perchloryl-piperidine

Hazardous decomposition products

Carbon oxides, Nitrogen oxides

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**Section 11. Toxicological Information**

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Category 4, Harmful if swallowed

[Data for components of the product]

[GHS Cat. Japan, base data]

rat LD50=133mg/kg (PATTY 5th, 2001)

Acute toxicity (Dermal)

[Product]

Category 3, Toxic in contact with skin

[Data for components of the product]

[GHS Cat. Japan, base data]

rabbit LD50=257mg/kg (PATTY 5th, 2001)

Acute toxicity (Inhalation)

[Product]

Category 3, Toxic if inhaled

[Data for components of the product]

[GHS Cat. Japan, base data]

vapor: mouse LC50=860ppm/4hr (PATTY 5th, 2001)

**Irritant properties****Skin corrosion/irritation**

[Product]

Category 1, Causes severe skin burns and eye damage

[Data for components of the product]

[GHS Cat. Japan, base data]

rabbit/human necrosis, chemical burns (PATTY 5th, 2001 et al)

**Serious eye damage/irritation**

[Product]

Category 1, Causes serious eye damage

[Data for components of the product]

[GHS Cat. Japan, base data]

rabbit corrosive (HSDB, 2008)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

**Reproductive toxicity**

[Product]

Category 2, Suspected of damaging fertility or the unborn child

[Data for components of the product]

[GHS Cat. Japan, base data]

cat. 2; HSDB, 2008

**Specific target organ toxicity (STOT)****STOT-single exposure**

[Product]

Category 1, Causes damage to organs

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

central nervous system (GESTIS, 2008)

STOT-repeated exposure data is not available.

Aspiration hazard data is not available.

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**Section 12. Ecological Information****Toxicity**

Toxicity data is not available.

**Water solubility**

miscible (ICSC, 2003)

**Persistence and degradability**

Persistence and degradability data is not available.

**Bioaccumulative potential**

[Data for components of the product]

log Pow=0.84 (ICSC, 2003)

**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

Dispose of contents/container as industrial waste. Accordance with local/national regulation.

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**Section 14. Transport Information**

UN Number or ID Number : 2401

UN Proper Shipping Name :

PIPERIDINE

Class or division (Transport hazard class) : 8

Subsidiary hazard(s) : 3

Packing group : I

ERG GUIDE No.: 132

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 2401

UN Proper Shipping Name :

PIPERIDINE

Class or division (Transport hazard class) : 8

Subsidiary hazard(s) : 3

Packing group : I

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 2401

UN Proper Shipping Name :

PIPERIDINE

Class or division (Transport hazard class) : 8

Subsidiary hazard(s) : 3

Hazard labels : Corrosive & Flamm.liquid

Packing group : I

Environmental hazards

Marine pollutants (yes/no) : no

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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

Applicable

Other regulatory information

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

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**Section 16. Other information**

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN





IMDG Code, 2020 Edition (Incorporating Amendment 40-20)

IATA Dangerous Goods Regulations (64th Edition) 2023

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2023 TLVs and BEIs. (ACGIH)

Supplier's data/information

#### General Disclaimer

Please provide SDS to customers for selling or transferring.

All chemicals have unknown hazard. Handle the product with care.

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 2022).