

Safety Data Sheets

1. Identification

Product name : Piperazine hexahydrate

Name of supplier : JUNSEI CHEMICAL CO., LTD.

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Product code(SDS NO) : 60125jis_E1-1

2. Hazards identification

GHS classification and label elements of the product

GHS classification

HEALTH HAZARDS

Skin corrosion/irritation : Category 1B

Respiratory sensitization : Category 1

Skin sensitization : Category 1

Reproductive toxicity : Category 2

(Note) GHS classification without description : Not applicable/Out of classification/Not classifiable



Signal word : Danger

HAZARD STATEMENT

Causes severe skin burns and eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

Suspected of damaging fertility or the unborn child

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.

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

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

Wash contaminated parts thoroughly after handling.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves/protective clothing/face protection.

Use personal protective equipment as required.

In case of inadequate ventilation wear respiratory protection (as specified by the manufacturer/supplier or the competent authority.)

Response

Immediately call a POISON CENTRE or doctor/physician.

Wash contaminated clothing before reuse.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

IF exposed or concerned: Get medical advice/attention.

If skin irritation or rash occurs: Get medical advice/attention.

If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.

Storage

Store locked up.

Disposal

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

3. Composition/information on ingredients

Substance/Preparation : Substance

Ingredient name: Piperazine hexahydrate

content(%): 98.0 <

Chemical formula: $C_4H_{10}N_2 \cdot 6H_2O$

Chemicals No, Japan: 5-953

CAS No.: 142-63-2 [110-85-0(anh)]

MW: 194.23

ECNO: 203-808-3(anh)

4. First-aid measures

General procedures

Immediately call a POISON CENTRE or doctor/physician.

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 experiencing respiratory symptoms call a POISON CENTER or doctor/physician.

IF ON SKIN (or hair)

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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 or doctor/physician if you feel unwell.

5. Fire-fighting measures

Suitable extinguishing media

In case of fire, use water mist, foam, dry powder, CO₂

Specific hazards arising from the chemical

Containers may explode when heated.

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

Runoff from fire control or dilution water may cause pollution.

Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/retardant clothing.

Wear cold insulating gloves/face shield/eye protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area after material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Avoid release to the rivers, lakes, ocean, groundwater.

Methods and materials for neutralization, containment and cleaning up

Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident

Collect spillage.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

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

Use personal protective equipment as required.

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Exhaust/ventilator

Exhaust/ventilator should be available.

Safety treatments

Avoid contact with skin.

Avoid contact with eyes.

Avoid breathing dust, vapor, mist, or gas.

Safety Measures/Incompatibility

Obtain special instructions before use.

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

When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities

Recommendation for storage

Keep container tightly closed.

Keep cool . Protect from sunlight.

Store in well-ventilated place.

Store locked up.

8. Exposure controls/personal protection

Control parameters e.g. occupational exposure limit values or biological limit values

Adopted value

ACGIH(2011) TWA: 0.03ppm(IFV) (Sen) (Resp sens; asthma)

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Protective equipment

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Wear positive pressure self-contained breathing apparatus (SCBA).

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.

Safety and Health measures

Wash ... thoroughly after handling.

Contaminated work clothing should not be allowed out of the workplace.

Wash contaminated clothing before reuse.

9. Physical and Chemical Properties

Physical properties

Appearance : Crystal or crystalline powder

Color : white

Odor : Irritant odor

pH : 10.8–11.8 (10% aq soln)

Phase change temperature

Initial Boiling Point/Boiling point : 125–130°C

Melting point/Freezing point : 42–44°C

Decomposition temperature data N.A.

Flash point data N.A.

Auto-ignition temperature data N.A.

Explosive data N.A.

Vapor pressure data N.A.

Vapor density data N.A.

Specific gravity/Density data N.A.

Solubility

Solubility in water : soluble

Solubility in solvent : Sol in ethanol. Practically insol in diethyl ether.

n-Octanol /water partition coefficient data N.A.

10. Stability and Reactivity

Stability

Stable under normal storage/handling conditions.

Deliquescence.

Possibility of hazardous reactions

Reacts with acid anhydrides, strong acids and strong oxidants. This generates fire hazard.

Attacks many metals. This produces flammable/explosive gas.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heat.

Incompatible materials

Strong acids, Strong oxidizing agents, Anhydrides, Metals.

Hazardous decomposition products

Carbon oxides, Nitrogen oxides

11. Toxicological Information

Symptoms related to the physical, chemical and toxicological characteristics

Acute toxicity

Oral toxicity component(s) data

(Piperazine) rat LD₅₀ = 1280 mg/kg (cal.)

Dermal toxicity component(s) data

Piperazine hexahydrate, JUNSEI CHEMICAL CO., LTD., 60125jis_E1-1, 11/03/2014

(Piperazine) rabbit LD50 = 1590 mg/kg (CERI_NITE hazard assessment data No.19, 2005)

Irritant properties

Skin corrosion/irritation

Skin corrosion/Irritation component(s) data

(Piperazine) rabbit 500 mg open ; MILD(RTECS)

Serious eye damage /irritation

Eye damage/irritation component(s) data

(Piperazine) rabbit 0.75 mg ; SEVERE(RTECS)

Allergenic and sensitizing effects

Respiratory sensitization component(s) data

(Piperazine) EU-RAR No.56, 2005

Skin sensitization component(s) data

(Piperazine) EU-RAR No.56, 2005

No Mutagenic effects data available

No Teratogenic effects data available

No Carcinogenic effects data available

No Toxicity for reproduction data available

No Delayed/chronic effects from short/long-term exposure data available

No Aspiration hazard data available

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Aquatic toxicity component(s) data

(Piperazine) Crustacea (Daphnia magna) EC50=21mg/L/48hr (EU-RAR, 2004)

Water solubility

(Piperazine) 15 g/100 ml (20°C) (ICSC, 2003)

No Persistence and degradability data available

Bioaccumulative potential

(Piperazine) log Pow=-1.17 (ICSC, 2003)

13. Disposal Considerations

Disposal methods

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

14. Transport Information

UN No, UN CLASS

UN No :2579

UN CLASS :8

PG :III

Proper shipping name :PIPERAZINE

ERG GUIDE NO :153

15. Regulatory Information

GHS classification and labelling

Skin Corr. 1B : H314 Causes severe skin burns and eye damage.

Resp. Sens. 1 : H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

Skin Sens. 1 : H317 May cause an allergic skin reaction

Repr. 2 : H361 Suspected of damaging fertility or the unborn child

US major regulations

TSCA

Piperazine

Other regulatory information

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

16. Other information

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (4th ed., 2011), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 17th edit. UN

Classification, labelling and packaging of substances and mixtures (reg.(EC) No 1272/2008)

2012 EMERGENCY RESPONSE GUIDEBOOK(US DOT)

2013 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/ENG/Classification/index.php>

Supplier's data/information

Chemical Risk Information Platform (CHRIP)(NITE) <http://www.safe.nite.go.jp/japan/db.html>

GHS Classification Guidance for Enterprises 2013 Revised Edition (August, 2013, METI)

Other information

This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It are advised to make their own test

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 EU official data