

Safety Data Sheet

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

Product identifier:

Product name: Hydrazine monohydrate 80%

Product code (SDS NO): 59220jis_J_E2-1

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Acute toxicity (Oral): Category 3

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Skin sensitization: Category 1

Germ cell mutagenicity: Category 2

Carcinogenicity: Category 2

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

Specific target organ toxicity – repeated exposure: Category 1 (liver, nervous system, gastrointestinal tract, kidney)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 1

Hazardous to the aquatic environment (Long-term): Category 1

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

Label elements



Signal word: Danger

HAZARD STATEMENT

Toxic if swallowed

Causes severe skin burns and eye damage

Causes serious eye damage

May cause an allergic skin reaction

Suspected of causing genetic defects

Suspected of causing cancer

Causes damage to organs after single exposure

Causes damage to organs through prolonged or repeated exposure

Very toxic to aquatic life

Very toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT**Prevention**

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Avoid release to the environment.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Wash contaminated parts thoroughly after handling.
- Wear protective gloves.
- Contaminated work clothing should not be allowed out of the workplace.
- Wear protective gloves, protective clothing or face protection.
- Wear eye protection/face protection.
- Use personal protective equipment as required.
- Do not eat, drink or smoke when using this product.

Response

- Collect spillage.
- Get medical advice/attention if you feel unwell.
- Immediately call a POISON CENTER or doctor/physician.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- 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 skin irritation or rash occurs: Get medical advice/attention.
- Take off contaminated clothing and wash it before reuse.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

- Store locked up.

Disposal

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

3. Composition/information on ingredients**Mixture/Substance selection:****Substance**

- Ingredient name: Hydrazine monohydrate
- Content (%): 79~81
- Chemical formula: $\text{H}_4\text{N}_2 \cdot \text{H}_2\text{O}$
- Chemicals No, Japan: 1-374
- CAS No.: 7803-57-8 [302-01-2(anh)]
- MW: 50.06
- ECNO: 206-114-9(anh)

4. First-aid measures**Descriptions of first-aid measures****General measures**

- Get medical attention/advice if you feel unwell.
- Immediately call a POISON CENTER or doctor/physician.

IF INHALED

- Remove person to fresh air and keep comfortable for breathing.
- Call a POISON CENTER or doctor/physician if you feel unwell.

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.

Immediately call a POISON CENTER or doctor/physician.

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

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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

Specific hazards arising from the substance or mixture

Containers may explode when heated.

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

Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Cool container with water spray.

Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/retardant clothing.

Wear protective gloves/protective clothing/eye protection/face 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

Keep unauthorized personnel away.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

PUBLIC SAFETY: Ventilate closed spaces before entering.

Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

Fire or Explosion : Runoff may pollute waterways.

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.

Stop leak if you can do it without risk.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Prevent entry into waterways, sewers, basements or confined areas.

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/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, fume, gas, mist or vapor.

Safety Measures/Incompatibility

Obtain special instructions before use.

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

Wear protective gloves, protective clothing or face protection.

Wear protective gloves.

Wear eye protection/face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities

Recommendation for storage

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

Keep cool. Protect from sunlight.

Store locked up.

8. Exposure controls/personal protection

Control parameters

No control value data available in MHLW

Adopted value

JSOH(1998) 0.1ppm; 0.21mg/m³ (dermal)

ACGIH(1988) TWA: 0.01ppm (URT cancer)(as Hydrazine)

Notation...Skin

OSHA-PEL

TWA: 1ppm, 1.3mg/m³(as Hydrazine)

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

Respiratory protection

Wear respiratory protection.

Hand protection

Wear protective gloves.

Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

Eye protection

Wear chemical safety goggle.

Wear eye/face protection.

Safety and Health measures

- Wash contaminated parts thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Contaminated work clothing should not be allowed out of the workplace.
- Take off contaminated clothing and wash it before reuse.

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

- Appearance: Liquid
- Color: Colorless
- Odor: Characteristic odor
- pH: $11.5 \leq \text{pH}$ (strong basic)

Phase change temperature

- Initial Boiling Point/Boiling point: ca. 119°C
- Melting point/Freezing point: ca. -57°C
- Decomposition temperature: >250°C
- Flash point: 103°C
- Auto-ignition temperature data N.A.
- Explosive properties data N.A.
- Vapor pressure data N.A.
- Vapor density data N.A.
- Specific gravity/Density: 1.028(25°C)

Solubility

- Solubility in water: Miscible
- n-Octanol/water partition coefficient data N.A.

10. Stability and Reactivity**Chemical stability**

- Stable under normal storage/handling conditions.
- Hygroscopic.
- Fumes in air.

Conditions to avoid

- Contact with incompatible materials.
- Open flames. Heat. Air.

Incompatible materials

- Acids, Strong oxidizing agents, Metals, Metal oxides. Combustible substances (organic substances)

Hazardous decomposition products

- Nitrogen oxides

11. Toxicological Information**Information on toxicological effects****Acute toxicity**

- Acute toxicity (Oral)
 - [GHS Cat. Japan, base data]
 - rat LD50=169mg/kg (MLHW report, 2003)
- Labor standard law, Japan; Toxic
 - Hydrazine monohydrate

Irritant properties

- Skin corrosion/irritation
 - [GHS Cat. Japan, base data]

rabbit : corrosive (NITE primary risk assessment No.73, 2005)

Serious eye damage /irritation

[GHS Cat. Japan, base data]

Skin Corr./Irrit. cat 1

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]

cat. 1; NITE primary risk assessment No.73, 2005

Germ cell mutagenicity

[GHS Cat. Japan, base data]

cat. 2; CERI/NITE risk assessment No.73, 2004

Mutagen [MOHL_J Notice]

Hydrazine monohydrate

Carcinogenicity

[GHS Cat. Japan, base data]

cat.2; (MHLW guideline, 2006)

JSOH-2B: Insufficient Evidence of Carcinogenicity for Humans

No reproductive toxicity data available

Delayed and immediate effects and also chronic effects from short- and long-term exposure

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

CNS; liver; kidney (MOE risk assessment, 2002)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

liver; nerve/nervous system; digestive apparatus; kidney (NITE primary risk assessment No.73, 2005)

No Aspiration hazard data available

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Very toxic to aquatic life

Very toxic to aquatic life with long lasting effects

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

Algae (selenastrum) ErC50=0.19mg/L/72hr

(Eco-toxicity tests of chemicals conducted by MOE in Japan, 2001, 2001)

Water solubility

Miscible (HSDB)

Persistence and degradability

no rapidly degrading [Hydrazine BOD_Degradation : 2% (Registered chemicals data check &review, Japan)]

Bioaccumulative potential

log Pow=-2.07 (PHYSPROP DB, 2005)

13. Disposal considerations

Waste treatment methods

Avoid release to the environment (- if this is not the intended use).

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

14. Transport Information**UN No, UN CLASS**

UN No.: 2030

Proper Shipping Name :HYDRAZINE AQUEOUS SOLUTION with more than 37% hydrazine, by mass

Class or division : 8

Subsidiary hazard(s) : 6.1

Packing group : II

ERG GUIDE No.: 153

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 2030

Proper Shipping Name : HYDRAZINE AQUEOUS SOLUTION with more than 37% hydrazine, by mass

Class or division : 8

Subsidiary hazard(s) : 6.1

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 2030

Proper Shipping Name :HYDRAZINE AQUEOUS SOLUTION with more than 37% hydrazine, by mass

Class or division : 8

Subsidiary hazard(s) : 6.1

Hazard labels : Corrosive & Toxic

Packing group : II

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : yes

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Environmental hazards

US major regulations

TSCA

Hydrazine (anh)

Other regulatory information

We are not able to check up the regulatory information in regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

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

Regulatory information in this section are limited to intentional ingredient(s) and/or impurities informed by supplier(s).

16. Other information

GHS classification and labelling

Acute Tox. 3: H301 Toxic if swallowed

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

Eye Dam. 1: H318 Causes serious eye damage

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

Muta. 2: H341 Suspected of causing genetic defects

Carc. 2: H351 Suspected of causing cancer

STOT SE 1: H370 Causes damage to organs after single exposure

STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

Aquatic Acute 1: H400 Very toxic to aquatic life

Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (60th Edition) 2019

Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2018 TLVs and BEIs. (ACGIH)

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

Supplier's data/information

NITE Chemical Risk Information Platform (NITE-CHRIP)

https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop

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

General Disclaimer

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 is advised to make their own tests to determinate the safety and suitability of each such product or combination for their own purposes.

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 2017).