

Safety Data Sheet

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

Product identifier:

Product name: 2,2'-Iminodiethanol

Reference number(SDS):33420jis_J_E1-3

Product type:

Reagent

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

Telephone number: +81-48-986-6161

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 1

Carcinogenicity: Category 2

Reproductive toxicity: Category 2

Specific target organ toxicity – single exposure: Category 1(liver)

Specific target organ toxicity – single exposure: Category 2(kidney, respiratory system)

Specific target organ toxicity – repeated exposure: Category 1(respiratory tract)

Specific target organ toxicity – repeated exposure: Category 2(blood, kidney, liver)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2

Hazardous to the aquatic environment (Long-term): Category 3

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H315-Causes skin irritation

H318-Causes serious eye damage

H351-Suspected of causing cancer

H361-Suspected of damaging fertility or the unborn child

H370-Causes damage to organs

H371-May cause damage to organs

H372-Causes damage to organs through prolonged or repeated exposure

H373-May cause damage to organs through prolonged or repeated exposure

H401-Toxic to aquatic life

H412-Harmful 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.
- Wear eye protection/face protection.
- Use personal protective equipment as required.
- Do not eat, drink or smoke when using this product.

Response

- Get medical advice/attention if you feel unwell.
- IF exposed or concerned: Get medical advice/attention.
- Immediately call a POISON CENTER/doctor/physician.
- IF exposed or concerned: Call a POISON CENTER/doctor/physician.
- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation 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.

Storage

- Store locked up.

Disposal

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

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

Common name, synonyms: Diethanolamine

Ingredient name:2,2'-Iminodiethanol

Content (%):98.0 <

Chemical formula:C₄H₁₁NO₂

Chemicals No, Japan:2-302;2-354

CAS No.:111-42-2

MW:105.14

ECNO:203-868-0

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

- Get medical advice/attention if you feel unwell.
- Immediately call a POISON CENTER/doctor/physician.
- Keep victim warm and quiet.
- Call emergency medical service.
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

IF INHALED

- Remove person to fresh air and keep comfortable for breathing.
- Give artificial respiration if victim is not breathing.

Administer oxygen if breathing is difficult.

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

IF ON SKIN (or hair)

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 skin irritation occurs: Get medical advice/attention.

Remove and isolate contaminated clothing and shoes.

For minor skin contact, avoid spreading material on unaffected skin.

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.

If victim is conscious, give 1 – 2 glasses of water.

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

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Abdominal pain. Burning sensation.

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes. Pain of the eyes. Severe deep burns of the eyes.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

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 resistant or flame 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.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

PUBLIC SAFETY: Ventilate closed spaces before entering.

EVACUATION : Spill: See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

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.

Keep out of low 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, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Obtain special instructions before use.

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

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

Wear eye protection/face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Any incompatibilities

Strong acids, Strong oxidizing agents should not be mixed with the chemicals.

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

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

Take off contaminated clothing and wash it before reuse.

Storage**Conditions for safe storage**

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

Keep cool. Protect from sunlight.

Store in accordance with local/national regulation.

Store locked up.

Container and packaging materials for safe handling data is not available.

Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See

Section 8 for exposure controls and personal protection recommendations.

8. Exposure controls/personal protection

Control parameters

Control value in MHLW is not available.

Adopted value

Adopted value in JSOH is not available.

ACGIH(2009) TWA: 1mg/m³(IFV) (Liver & kidney dam)

Notation...Skin

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. Recommended material(s): neoprene, nitrile, butyl rubber, viton, PVC, impermeable or chemical resistant rubber

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.

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Viscous liquid

Color: Colorless ~ Pale yellow

Odor: Characteristic odor

Odor threshold data is not available.

Melting point/Freezing point: 28°C

Boiling point or initial boiling point: 269°C

Boiling range data is not available.

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

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 1.7 vol %

Upper explosion limit: 9.8 vol %

Flash point: (o.c.)134°C

Auto-ignition temperature: 662°C

Decomposition temperature: 270°C

Self-Accelerating Decomposition Temperature/SADT data is not available.

pH: 11.0 (0.1 N aqueous solution)

Dynamic viscosity: ca. 390mPas(30°C)

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible(1000g/L, 20°C)

Solubility in solvent: Very soluble in ethanol.

n-Octanol/water partition coefficient: log Pow-1.43

Vapor pressure: <1 Pa (20°C)

Vapor density data is not available.

Density and/or relative density: 1.0966 (20°C)

Relative vapor density (Air=1): 3.65

Relative density of the Vapor/air – mixture at 20°C (Air = 1) data is not available.

Particle characteristics data is not available.

Other information

Critical temperature data is not available.

Evaporation rate data is not available.

VOC data is not available.

10. Stability and Reactivity

Reactivity

Runaway polymerization will not occur.

Chemical stability

Stable under normal storage/handling conditions.

Hygroscopic.

Absorbs carbon dioxide from air.

Possibility of hazardous reactions

The vapour is heavier than air.

Decomposes on burning. This produces toxic fumes.

The solution in water is a medium strong base. Reacts violently with strong oxidants and strong acids.

Attacks copper, zinc, aluminium and their alloys.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heat.

Incompatible materials

Strong acids, Strong oxidizing agents

Hazardous decomposition products

Carbon oxides, Nitrogen oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

rat LD50=2300mg/kg (SIDS, 2008)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

rabbit : moderate irritation (SIDS, 2008)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

rabbit : severe irritation (SIDS, 2008)

Allergenic and sensitizing effects data is not available.

Germ cell mutagenicity

[GHS Cat. Japan, base data]

mice (mutation assay in vivo): Negative(SIDS, 2008)

Reverse-mutation assay in bacteria (Ames test) :Negative (NTP DB 375254, access on Sep. 2011)

Chromosome aberration test :Negative (CHO cells; NTP DB 375254, access on Sep. 2011)

Carcinogenicity

[GHS Cat. Japan, base data]

cat.2; IARC Gr. 2B (IARC, 2011)

[IARC]

Group 2B : Possibly carcinogenic to humans

[ACGIH]

A3(2009) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

[JSOH]

Group 2B: The agents which are probably or possibly carcinogenic to humans

Reproductive toxicity

[GHS Cat. Japan, base data]

cat. 2; NTP TER 96001, 1999

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

liver (SIDS, 2008)

[cat.2]

[GHS Cat. Japan, base data]

kidney; respiratory system (SIDS, 2008)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(2,2'-Iminodiethanol)

respiratory tract (SIDS, 2008)

[cat.2]

[GHS Cat. Japan, base data]

blood; kidney; liver (SIDS, 2008)

Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

H401-Toxic to aquatic life

H412-Harmful to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

Crustacea (Daphnia) LC50=2.15mg/L/48hr (Aquire, 2012)

Water solubility

1000g/L(20°C) (HSDB; PHYSPROP DB)

Persistence and degradability

TOC_Degradation : 96.7% (METI existing chemical safety inspections)

Bioaccumulative potential

log Pow=-1.43 (PHYSPROP DB, 2005)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

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

Avoid release to the environment.

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

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

UN No. or ID No.: 3267

UN Proper Shipping Name : CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.

Class or division (Transport hazard class) : 8

Packing group : III

ERG GUIDE No.: 153

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 3267

Proper Shipping Name : CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.

Class or division : 8

Packing group : III

IATA Dangerous Goods Regulations

UN No.: 3267

Proper Shipping Name : CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.

Class or division : 8

Hazard labels : Corrosive

Packing group : III

Environmental hazards**MARPOL Annex III – Prevention of pollution by harmful substances**

Marine pollutants (yes/no) : no

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

2,2'-Iminodiethanol

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Y

2,2'-Iminodiethanol(Y-217)

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

2,2'-Iminodiethanol

Other regulatory information

We are not able to check up the regulatory information with 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), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

16. Other information**GHS classification and labelling**

H315–Skin Irrit. 2: H315 Causes skin irritation

H318–Eye Dam. 1: H318 Causes serious eye damage

H351–Carc. 2: H351 Suspected of causing cancer

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

H370–STOT SE 1: H370 Causes damage to organs

H371–STOT SE 2: H371 May cause damage to organs

2,2'-Iminodiethanol ,JUNSEI CHEMICAL CO., LTD.,33420jis_J_E1-3,22/Jun/2022

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

H373-STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure

H401-Aquatic Acute 2: H401 Toxic to aquatic life

H412-Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects

Reference Book

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

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

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2021 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2021 Recommendation on TLVs (JSOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.17(<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIIP"

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

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

Definitions and Abbreviations

SDS (Safety Data Sheet)

LD50 (Lethal Dose, 50%)

LC50 (Lethal Concentration, 50%)

IARC (International Agency for Research on Cancer)

ACGIH (American Conference of Governmental Industrial Hygienists)

EPA (US Environmental Protection Agency)

NTP (US National Toxicology Program)

JSOH (Japan Society for Occupational Health)

EU (European Union)

EC50 (Effective Concentration, 50%)

NOEC (No Observed Effect Concentration)

BOD (Biochemical Oxygen Demand)

COD (Chemical Oxygen Demand)

BCF (Bioconcentration Factor)

anh (anhydride)

General Disclaimer

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 2020).