Date of issue: 2017/10/30
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Safety Data Sheet

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

Product identifier:
Product name: 2,2'-Iminodiethanol
SDS No. : 2340E-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

Section 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
Skin sensitization: Category 1A
Carcinogenicity: Category 2
Reproductive toxicity: Category 2
Specific target organ toxicity - single exposure: Category 1 (liver)
Specific target organ toxicity - single exposure: Category 2 (respiratory system, kidneys)
Specific target organ toxicity - repeated exposure: Category 1 (respiratory tract)
Specific target organ toxicity - repeated exposure: Category 2 (blood, liver, kidneys)
ENVIRONMENT HAZARDS
Hazardous to the aquatic environment, short-term (acute): Category 2
Hazardous to the aquatic environment, long-term (chronic): Category 3
(Note) GHS classification without description: Not classified/Classification not possible
Label elements

Signal word: Danger
HAZARD STATEMENT
Causes skin irritation
Causes serious eye damage
May cause an allergic skin reaction
Suspected of causing cancer
Suspected of damaging fertility or the unborn child
Causes damage to organs (liver)
May cause damage to organs (respiratory system, kidneys)
Causes damage to organs through prolonged or repeated exposure (respiratory tract)
May cause damage to organs through prolonged or repeated exposure (blood, liver, kidneys)
Toxic to aquatic life
Harmful to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

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 eye protection/face protection.
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.
IF ON SKIN: Wash with plenty of soap and water.
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.

Disposal

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

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:2,2'-Iminodiethanol
Content (%):98(min)
Chemical formula:C4H11NO2
Chemicals No, Japan:2-302;2-354
CAS No.:111-42-2
MW:105.14
ECNO:203-868-0

Note : The figures shown above are not the specifications of the product.

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

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

Section 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

Indoor firefighting equipment or outdoor firefighting equipment

Sprinkler equipment

Dry-powder firefighting equipment - other (except for phosphate etc.,hydrogen carbonate etc.)

Straight stream water extinguisher

Water mist extinguisher

Reinforcing liquid jet extinguisher

Dry-powder extinguisher - other (except for phosphate etc.,hydrogen carbonate etc.)

Bucket of water or tank of water

Specific hazards arising from the substance or mixture

Containers may explode when heated.

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

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 full face peace operated positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

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.

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

Preventive measures for secondary accident

Collect spillage.

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.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Wear protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

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.

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

Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Container and packaging materials for safe handling

Glass

Polyethylene

Stainless steel

Section 8. Exposure controls/personal protection

Control parameters

Adopted value

(2,2'-Iminodiethanol)

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

Notation

(2,2'-Iminodiethanol)

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.

Eye protection

Wear eye/face protection.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Crystals or liquid

Color: White or colorless to pale yellow

Odor: Characteristic odor

Melting point/Freezing point: 28℃

Boiling point or initial boiling point: (2,2'-Iminodiethanol)269℃

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: (2,2'-Iminodiethanol)134℃
Auto-ignition temperature: (2,2'-Iminodiethanol)662℃
Decomposition temperature data is not available.
pH data is not available.
Kinematic viscosity data is not available.
Solubility:
Solubility in water: Soluble
n-Octanol/water partition coefficient: log Pow=-1.43
Vapor pressure: <1 Pa (20℃)
Vapor density: 3.65
Density and/or relative density: 1.09(liquid)
Relative vapor density (Air=1): 3.65
Particle characteristics data is not available.

Section 10. Stability and Reactivity

Reactivity
Not available.
Chemical stability
Hygroscopic (absorbs moisture from the 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. (ICSC 0618)
Conditions to avoid
Contact with incompatible materials.
Contact with fire source.
Incompatible materials
Strong acids, Strong oxidizing agents
Hazardous decomposition products
Carbon oxides, Nitrogen oxides

Section 11. Toxicological Information

Information on toxicological effects
Acute toxicity
Acute toxicity (Oral)
[Data for components of the product]
[GHS Cat. Japan, base data]
(2,2'-Iminodiethanol)
rat LD50=2300mg/kg (SIDS, 2008)
Irritant properties
Skin corrosion/irritation
[Data for components of the product]
[GHS Cat. Japan, base data]
(2,2'-Iminodiethanol)
rabbit moderate irritation (SIDS, 2008)
Serious eye damage/irritation
[Data for components of the product]
[GHS Cat. Japan, base data]
(2,2'-Iminodiethanol)

rabbit severe irritation (SIDS, 2008)

Sensitization

Skin sensitization

[Data for components of the product]

[GHS Cat. Japan, base data]

(2,2'-Iminodiethanol)

cat. 1A; MOE Result of the initial environmental risk assessment of chemicals, 2021; Recommendation of Occupational Exposure Limits (JSOH), 2017

Mutagenic effects data is not available.

Carcinogenicity

[Data for components of the product]

[GHS Cat. Japan, base data]

(2,2'-Iminodiethanol)

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

[IARC]

(2,2'-Iminodiethanol)

Group 2B : Possibly carcinogenic to humans

[ACGIH]

(2,2'-Iminodiethanol)

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

Reproductive toxicity

[Data for components of the product]

[GHS Cat. Japan, base data]

(2,2'-Iminodiethanol)

cat. 2; NTP TER 96001, 1999

Specific target organ toxicity (STOT)

STOT-single exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(2,2'-Iminodiethanol)

liver (SIDS, 2008)

[cat.2]

[GHS Cat. Japan, base data]

(2,2'-Iminodiethanol)

respiratory system, kidneys (SIDS, 2008)

STOT-repeated exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(2,2'-Iminodiethanol)

respiratory tract (SIDS, 2008)

[cat.2]

[GHS Cat. Japan, base data]

(2,2'-Iminodiethanol)

blood, liver, kidneys (SIDS, 2008)

Aspiration hazard data is not available.

Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[GHS Cat. Japan, base data]
(2,2'-Iminodiethanol)
Crustacea (Daphnia) LC50=2.15mg/L/48hr (Aquire, 2012)

Water solubility
(2,2'-Iminodiethanol)
very good (ICSC, 2002)

Persistence and degradability
[Data for components of the product]
(2,2'-Iminodiethanol)
TOC_Degradation : 96.7% (METI existing chemical safety inspections)

Bioaccumulative potential
[Data for components of the product]
(2,2'-Iminodiethanol)
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.

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
Avoid release to the environment.
Dispose of contents/container in accordance with local/national regulation.

Section 14. Transport Information

UN Number or ID Number : Not applicable

IMDG Code (International Maritime Dangerous Goods Regulations)
UN Number or ID Number : Not applicable

IATA (Dangerous Goods Regulations)
UN Number or ID Number : Not applicable

Environmental hazards
Marine pollutants (yes/no) : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Noxious Liquid Substances ; Cat. Y
2,2'-Iminodiethanol

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
2,2'-Iminodiethanol

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

Section 16. Other information

GHS classification and labelling

Skin corrosion/irritation, Category 2: H315 Causes skin irritation
Serious eye damage/eye irritation, Category 1: H318 Causes serious eye damage
Skin sensitization, Category 1A: H317 May cause an allergic skin reaction
Carcinogenicity, Category 2: H351 Suspected of causing cancer
Reproductive toxicity, Category 2: H361 Suspected of damaging fertility or the unborn child
STOT - single exposure, Category 1: H370 Causes damage to organs
STOT - single exposure, Category 2: H371 May cause damage to organs
STOT - Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure
STOT - Repeated exposure, Category 2: H373 May cause damage to organs through prolonged or repeated exposure
Hazardous to the aquatic environment, short-term (acute), Category 2: H401 Toxic to aquatic life
Hazardous to the aquatic environment, long-term (chronic), Category 3: H412 Harmful to aquatic life with long lasting effects

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN
IMDG Code, 2020 Edition (Incorporating Amendment 40-20)
IATA Dangerous Goods Regulations (62nd Edition) 2021
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2022 TLVs and BEIs. (ACGIH)
Supplier's data/information

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 2021).