



Safety Data Sheet

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

Product identifier:

Product name: 10w/v%-Triethanolamine solution

SDS No. : E0059E-1

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

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

Division: Safety Management Dept. of Chemicals

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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 2

Skin sensitization: Category 1

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

Label elements

Signal word: Warning

HAZARD STATEMENT

Causes skin irritation

Causes serious eye irritation

May cause an allergic skin reaction

PRECAUTIONARY STATEMENT**Prevention**

Avoid breathing 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.

Response

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.

If eye irritation persists: Get medical advice/attention.

Disposal

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



3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:2,2',2''-Nitrilotriethanol

Content (%):9.9

Chemical formula:(CH₂CH₂OH)₃N

Chemicals No, Japan:2-308

CAS No.:102-71-6

MW:149.19

ECNO:203-049-8

Ingredient name:Water

Content (%):90

Chemical formula:H₂O

CAS No.:7732-18-5

MW:18.02

ECNO:231-791-2

Note : The figures shown above are not the specifications of the product. The content of products may exceed the figures shown above.

Impurities

2,2'-Iminodiethanol 0.10% (CAS No.111-42-2)

4. First-aid measures

Descriptions of first-aid measures

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.

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

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

Unsuitable extinguishing media data is not available.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

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

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.

Preventive measures for secondary accident

Collect spillage.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Avoid breathing 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.

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.

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

8. Exposure controls/personal protection

Control parameters

Adopted value

(2,2',2''-Nitrilotriethanol)

ACGIH(1990) TWA: 5mg/m³ (Eye & skin irr)

(2,2' -Iminodiethanol)

ACGIH(2008) 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.

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

Physical state: Liquid

Color: Colorless

Odor: Slightly characteristic odor

Melting point/Freezing point data is not available.

Boiling point or initial boiling point data is not available.

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 data is not available.

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: Soluble

n-Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Density and/or relative density: 1.01

Relative vapor density (Air=1) data is not available.

No Particle characteristics data is not available.

10. Stability and Reactivity**Reactivity**

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(2,2',2''-Nitrilotriethanol)

The substance is a weak base. Reacts with oxidants. Decomposes on burning. This produces toxic and corrosive fumes including nitrogen oxides. (ICSC 1034)

(2,2'-Iminodiethanol)

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, Oxidizing agents, 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]

(2,2'-Iminodiethanol)

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

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(2,2',2''-Nitrilotriethanol)

human irritation (NTP TR 518, 2004 et al)

(2,2'-Iminodiethanol)

rabbit moderate irritation (SIDS, 2008)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(2,2',2''-Nitrilotriethanol)

rabbit recover within 14 days (PATTY 6th, 2012 et al)

(2,2'-Iminodiethanol)

rabbit severe irritation (SIDS, 2008)

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]

(2,2',2''-Nitrilotriethanol)

cat. 1; ACGIH 7th, 2001

Mutagenic effects data is not available.

Carcinogenicity

[GHS Cat. Japan, base data]

(2,2'-Iminodiethanol)

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

(2,2',2''-Nitrilotriethanol)

IARC-Gr.3 : Not Classifiable as a Human Carcinogen

(2,2'-Iminodiethanol)

IARC-Gr.2B : Possibly carcinogenic to humans

(2,2'-Iminodiethanol)

ACGIH-A3(2008) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

Reproductive toxicity

[GHS Cat. Japan, base data]

(2,2'-Iminodiethanol)

cat. 2; NTP TER 96001, 1999

STOT

STOT-single exposure

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]



(2,2',2''-Nitrilotriethanol)

respiratory tract irritation (NTP TR 518, 2004)

STOT-repeated exposure data is not available.

Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(2,2',2''-Nitrilotriethanol)

Algae (*Scenedesmus subspicatus*) EC50=169mg/L/96hr (SIDS, 2001)

(2,2'-Iminodiethanol)

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

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

(2,2',2''-Nitrilotriethanol)

Crustacea (*Daphnia magna*) NOEC=16mg/L/21 days (SIDS, 2001)

Water solubility

(2,2',2''-Nitrilotriethanol)

miscible in water (HSDB, 2013)

(2,2'-Iminodiethanol)

very good (ICSC, 2002)

Persistence and degradability

(2,2',2''-Nitrilotriethanol)

Not degrade rapidly (BOD_Degradation : 0% (Registered chemicals data check & review 1978))

(2,2'-Iminodiethanol)

TOC_Degradation : 96.7% (Registered chemicals data check & review)

Bioaccumulative potential

(2,2',2''-Nitrilotriethanol)

log Pow=-2.3 (ICSC, 2003)

(2,2'-Iminodiethanol)

log Pow=-1.43 (PHYSROP 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

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

14. Transport Information

Not applicable to UN No., UN CLASS

Not applicable to IMDG Code

Not applicable to IATA Dangerous Goods Regulations

Environmental hazards

MARPOL Annex III - Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no



Transport in bulk according to Annex II of MARPOL73/78 and IBC Code

Noxious Liquid ; Cat. Y
2,2'-Iminodiethanol
Noxious Liquid ; Cat. Z
2,2',2''-Nitrilotriethanol
Non Noxious Liquid ; Cat. OS
Water

15. Regulatory Information

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

US Federal Regulations

Chemicals listed in TSCA Inventory

2,2',2''-Nitrilotriethanol; 2,2'-Iminodiethanol; Water

Other regulatory information

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

16. Other information

GHS classification and labelling

Skin Irrit. 2: H315 Causes skin irritation

Eye Irrit. 2: H319 Causes serious eye irritation

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

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (7th revised edition, 2017), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (61th Edition) 2020

Classification, labelling and packaging of substances and mixtures (Table 3 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2020 TLVs and BEIs. (ACGIH)

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

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 2019).