



Safety Data Sheet

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

Product identifier:

Product name: Triethylamine

SDS No. : 8014E-3

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

Telephone number: +81-6-6946-8061

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable liquids: Category 2

HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Acute toxicity (Dermal): Category 3

Acute toxicity (Inhalation): Category 4

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

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

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – repeated exposure: Category 2(respiratory apparatus)

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

Highly flammable liquid and vapor

Harmful if swallowed

Toxic in contact with skin

Harmful if inhaled

Causes severe skin burns and eye damage

Causes serious eye damage

Causes damage to organs after single exposure(CNS)

May cause respiratory irritation

May cause damage to organs through prolonged or repeated exposure(respiratory apparatus)

Toxic to aquatic life

Harmful to aquatic life with long lasting effects

**PRECAUTIONARY STATEMENT****Prevention**

- Avoid release to the environment.
- Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/lighting equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Wash contaminated parts thoroughly after handling.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Do not eat, drink or smoke when using this product.

Response

- In case of fire: Use appropriate media other than water for extinction.
- Get medical advice/attention if you feel unwell.
- 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.
- Take off immediately all 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:** Call a POISON CENTER or doctor/physician if you feel unwell.
- IF SWALLOWED:** Rinse mouth. Do NOT induce vomiting.

Storage

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

Disposal

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

Specific Physical and Chemical hazards

- Highly flammable liquid. Vapor/air mixture may explode.

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

Ingredient name:Triethylamine
Content (%):98(min)
Chemical formula:(C₂H₅)₃N
Chemicals No, Japan:2-141
CAS No.:121-44-8
MW:101.19
ECNO:204-469-4

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

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

- Get medical attention/advice if you feel unwell.

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.

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 foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Indoor firefighting equipment or outdoor firefighting equipment

Sprinkler equipment

Dry-powder firefighting equipment – except for phosphate etc.,hydrogen carbonate etc.

Straight stream water extinguisher

Water mist extinguisher

Reinforcing liquid jet extinguisher

Dry-powder extinguisher – 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/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)

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.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/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.

Take off immediately all 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

Iron

8. Exposure controls/personal protection

Control parameters

Adopted value

(Triethylamine)

ACGIH(2014) TWA: 0.5ppm

STEL: 1ppm (Visual impair; URT irr)

Notation

(Triethylamine)

Skin

OSHA-PEL

TriethylamineTWA: 25ppm, 100mg/m³

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 to pale yellow
- Odor: Characteristic odor
- pH data is not available.
- Boiling point or initial boiling point: 89°C
- Boiling range data is not available.
- Melting point/Freezing point: -115°C
- Decomposition temperature data is not available.
- Flammability (gases, liquids and solids) data is not available.
- Flash point: (Triethylamine)(C.C.) -17°C
- Auto-ignition temperature: 230°C
- Lower and upper explosion limit/flammability limit:
 - Lower explosion limit: 1.2 vol %
 - Upper explosion limit: 8 vol %
- Vapor pressure: 7.2 kPa (20°C)
- Relative vapor density (Air=1): 3.5
- Relative density of the Vapor/air - mixture at 20°C (Air = 1): 1.2
- Density and/or relative density: 0.73
- Dynamic viscosity: 0.363mPas (25°C)
- Kinematic viscosity data is not available.
- Solubility:
 - Solubility in water: (good) 17g/100 ml (20°C)
 - n-Octanol/water partition coefficient: log Pow1.45
- 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

- The vapour is heavier than air and may travel along the ground; distant ignition possible.
- Decomposes on burning. This produces irritating and toxic gases including nitrogen oxides.
- The substance is a strong base. It reacts violently with acid and is corrosive to aluminium, zinc, copper and their alloys in the presence of moisture. Reacts violently with strong oxidants. This generates fire and explosion hazard. Attacks some forms of plastic, rubber and coatings. (ICSC 0203)

Conditions to avoid

- Contact with incompatible materials.
- Contact with fire source.

Incompatible materials

- Acids, Strong oxidizing agents

Hazardous decomposition products

- Nitrogen oxides



11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Triethylamine)

rat LD50=460mg/kg (ACGIH 7th, 2015 et al.)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

(Triethylamine)

rabbit LD50=420mg/kg (ACGIH 7th, 2015)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Triethylamine)

vapor: rat LC50=2600ppm/4hr (DFGOT vol.13, 1999)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Triethylamine)

rabbit corrosive (DFGOT, vol.13, 1999)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Triethylamine)

rabbit corrosive (DFGOT, vol.13, 1999)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

(Triethylamine)

ACGIH-A4(2014) : Not Classifiable as a Human Carcinogen

Reproductive toxicity data is not available.

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Triethylamine)

CNS (PATTY (6th, 2012))

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(Triethylamine)

respiratory tract irritation (ACGIH 7th, 2015; DFGOT vol.13, 1999)

STOT-repeated exposure

[cat.2]

[GHS Cat. Japan, base data]

(Triethylamine)

respiratory apparatus (MOE risk assessment, 2008)

Aspiration hazard data is not available.



12. Ecological Information

Ecotoxicity

Aquatic toxicity

Toxic to aquatic life

Harmful to aquatic life with long lasting effects

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

(Triethylamine)

Algae (*Pseudokirchneriella subcapitata*) ErC50=7.97mg/L/72hr (MOE Japan, 2008)

Water solubility

(Triethylamine)

17 g/100 ml (20°C) (ICSC, 2002)

Persistence and degradability

(Triethylamine)

BOD_Degradation : 34%, 25%, 26% (Registered chemicals data check & review, 1990)

Bioaccumulative potential

(Triethylamine)

log Pow=1.45 (ICSC, 2002); BCF < 4.9 (Check & Review, Japan)

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 (- if this is not the intended use).

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

14. Transport Information

UN No.: 1296

Proper Shipping Name :

TRIETHYLAMINE

Class or division : 3

Subsidiary hazard(s) : 8

Packing group : II

ERG GUIDE No.: 132

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1296

Proper Shipping Name :

TRIETHYLAMINE

Class or division : 3

Subsidiary hazard(s) : 8

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 1296

Proper Shipping Name :

TRIETHYLAMINE

Class or division : 3

Subsidiary hazard(s) : 8



Hazard labels : Flamm.liquid & Corrosive
Packing group : II
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
Triethylamine

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
US major regulations
Chemicals listed in TSCA Inventory
Triethylamine
Other regulatory information
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

GHS classification and labelling

Flam. Liq. 2: H225 Highly flammable liquid and vapor
Acute Tox. 4: H302 Harmful if swallowed
Acute Tox. 3: H311 Toxic in contact with skin
Acute Tox. 4: H332 Harmful if inhaled
Skin Corr. 1: H314 Causes severe skin burns and eye damage
Eye Dam. 1: H318 Causes serious eye damage
STOT SE 1: H370 Causes damage to organs after single exposure
STOT SE 3: H335 May cause respiratory irritation
STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure
Aquatic Acute 2: H401 Toxic to aquatic life
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), 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)
2019 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 2018).