

Triethanolamine

Section 1 - Chemical Product and Company Identification

Product name : Triethanolamine

Recommended use : Laboratory chemicals, Testing, Research and Industrial use

Restriction of use : Not for use other than for non-drinking, testing, research and industrial purposes

Company Identification

Company : OCI Company Ltd.

Address : 94, Sogong-ro, Jung-gu, Seoul, KOREA

Tel No. : 82 - 2 - 727 - 9494

Section 2 - Hazards Identification

1) Hazard Classification **Serious eye damage / Eye irritation : 2**
 Skin Corrosion/Skin Irritation : 2
 Skin sensitisation: 1
 Specific target organ toxicity following single exposure : 3 (Respiratory tract stimulation)

2) Warning signal

Symbol



Signal word

Warning

Hazard-Danger statement

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H319 Causes serious eye irritation

H335 May cause respiratory irritation Prevention precautionary statements

Precautionary statements

Precaution

P261 Avoid breathing dust/fume/gas/mist/vapours/spray

P264 Wash ... thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area

P272 Contaminated work clothing should not be allowed out of the workplace

P280 Wear protective gloves/protective clothing/eye protection/face protection

Measures

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P321 Specific treatment (see ... on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362 Wash with plenty of soap and water.

P363 Rinse skin with water/shower

Storage P403+P233 Store in a well-ventilated place Keep container tightly closed

P405 Store locked up

Dispose P501 Dispose of contents/container to the related laws

3) NFPA

Health Rating 2

Flammability Rating 1

Reactivity Rating 1

Section 3 - Composition, Information on Ingredients

Component : Triethanolamine

CAS No. : 102-71-6

Content : 100%

Section 4 - First Aid Measures

1) Eye contact :

Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

2) Skin contact :

Wash skin thoroughly with soap and water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

3) Inhalation :

Move to fresh air. Get medical attention if symptoms persist.

4) Ingestion :

Get medical attention if symptoms occur. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

5) Indication of immediate medical attention and special treatment needed Treatment :

Treat symptomatically. Symptoms may be delayed.

Section 5 - Fire Fighting Measures

1) Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

2) Specific hazards arising from the chemical:

Thermal decomposition products: Carbon oxides

Fire and explosion hazards: Serious fire hazard exists.

Steam or gas may be ignited from a distant source of ignition and may diffuse in an instant.

Vapors are heavier than air and may spread along floors.

Vapors may form explosive mixtures with air.

3) Special protective equipment and precautions for firefighters

Move containers from fire area if you can do it without risk.

When extinguishing a fire, be sure to wear personal protective equipment.

If it is not possible to extinguish the fire, withdraw immediately.

Keep containers cool by spraying with water for a long time, even after the fire is out. Isolate hazardous areas and deny access to people.

Section 6 - Accidental Release Measures

1) Personal precautions, protective equipment and emergency procedures :

Don't touch leakages and avoid inhale and skin contact, ventilate and use air respiratory in closed room, remove ignition source.

2) Environmental precautions

Use appropriate containment to avoid environmental contamination.

Put on sand, earth or other appropriate barrier to prevent spreading or entering into drains, ditches or rivers.

3) Methods and material for containment and cleaning up :

Absorb spilled material with sand, clay, and other adsorbents.

Section 7 - Handling and Storage

1) Precautions for safe handling:

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition.

Protect material from direct sunlight. Take precautionary measures against static discharges.

Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/face protection.

Avoid contact with eyes, skin, and clothing. Avoid breathing high vapor concentrations. Do not taste or swallow.

Use only with adequate ventilation. Wash hands thoroughly after handling.

2) Conditions for safe storage, including any incompatibilities :

Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a cool, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

Section 8 - Exposure Controls, Personal Protection

1) Occupational exposure limit, biological exposure limit

Domestic regulations : No data available

ACGIH : TWA 5 mg/m³

Biological exposure limit : No data available

2) Appropriate Engineering Controls :

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available

in the immediate work area. Use explosion-proof ventilation equipment.

3) Personal protective equipment

Respiratory protection : Because it is concerned about the harmfulness of human body due to chemical substances, it is recommended to wear respiratory protective equipment with canister mask or gas filter in consideration of physical and chemical characteristics when handling.

Respiratory protection should be certified by the Health and Safety Authority.
It is concerned about the harmfulness of the human body depending on the working environment, it should wear respirator, air-purifying respirator

Eye protection : Wear safety glasses with side shields (or goggles).

Hand Protection: Chemical resistant gloves

Skin & Body Protection : Wear suitable protective clothing

Section 9 - Physical and Chemical Properties

Appearance

Physical state: Liquid

Form: Liquid

Color: Colorless to pale yellow

Odor : Slight ammonia odor

Odor threshold : No data available

pH : 10.5 (0.1N Soln)

Melting point/freezing point : 20.5 °C

Initial boiling point and boiling range: 335 °C

Flash Point : 179 °C

Evaporation rate : 0.01.

Flammability (solid, gas) : Not applicable

Upper/lower limit on flammability or explosive limits : 8.5 / 1.3 %

Vapor pressure : 1.33 mmHg (20°C)

Solubility(ies) : 100 g/100ml (Soluble)

Vapor density : 5.1

Relative density : 1.1

Partition coefficient (n-octanol/water) : -1.59

Auto-ignition temperature : 324 °C

Decomposition temperature : No data available.

Viscosity : 590.5 cP (at 25 °C)

Molecular weight : 149.19

Section 10 - Stability and Reactivity

- 1) Chemical stability and Possibility of hazardous reactions : Material is stable under normal conditions.
- 2) Conditions to avoid : Avoid heat, sparks, flames and other sources of ignition.
- 3) Incompatible materials : Combustible substances, oxidants, reducing substances
- 4) Hazardous decomposition products : Thermal decomposition may release oxides of nitrogen.

Section 11 - Toxicological Information

1) Information on likely routes of exposure :

Ingestion: May cause irritation of the gastrointestinal tract.

Inhalation: May cause irritation to the respiratory system.

Skin contact: May cause irritation.

Eye contact: Causes serious eye irritation.

2) Information on health hazards

Acute toxicity

Oral : LD50 11300 mg/kg ~ 4200 mg/kg Rat

Dermal : LD50 2000 mg/kg Rabbit

Inhalation : No data available.

Skin Corrosion/Irritation : Causes mild skin irritation

Serious Eye Damage/Eye Irritation : Causes serious eye damage (blurred vision)

Respiratory Sensitization : No data available.

Skin Sensitization : skin irritability.

Carcinogenicity

Occupational Safety and Health Act : No data available.

Notice of Ministry of Employment and Labor : No data available.

IARC : Group 3.

OSHA : No data available.

ACGIH : No data available.

NTP : No data available.

EU CLP : No data available.

Germ Cell Mutagenicity : Germ cell mutagenicity in in vitro and in vivo assays: negative

Reproductive toxicity : No effects on reproductive and reproductive performance in rats were reported

Specific Target Organ Toxicity - Single Exposure : In rats, coma, septic spasms and dyspnea are present.

It causes irritation of the mucous membranes in humans

Specific Target Organ Toxicity - Repeated Exposure : No data available

Aspiration Hazard Product : No data available

Section 12 - Ecological Information

1) Ecotoxicity:

Fish : LC50 11800 mg/l 96 hr

Invertebrates : EC50 609.98 mg/l 48 hr

Aquatic algae : ErC50 169 mg/l 96 hr

2) Persistence and degradability

Persistence : No data available.

Degradability : No data available.

3) Bioaccumulative potential

Concentrations : No data available.

Biodegradability : 91% 28 day

4) Mobility in soil: No data available.

5) Other adverse effects: No data available.

Section 13 - Disposal Considerations

- 1) Waste methods : If specified in the Waste Management Act, waste contents and containers in accordance with the regulations.
- 2) Precautions for Waste : Consider the precautions specified in the regulations when specified in the Waste Management Act

Section 14 - Transport Information

- 1) UN Number : Not regulated
- 2) Shipping Name : Not applicable
- 3) Hazard Class : Not applicable
- 4) Packing Group : Not applicable
- 5) Marine pollutant : No data available
- 6) Particular safety Measures for transportation :
 - Fire emergency measures : Not applicable
 - Leakage emergency measures : Not applicable

Section 15 - Regulatory Information

- 1) Occupation safety and health acts Standard material of exposure : Not applicable
 - 2) Chemical Substances Control Act : Not applicable
 - 3) National law of Safety management of hazardous material : 4 Class 3 Petroleum water-soluble liquid 4000L
 - 4) National law of management of Wastes : Designated Waste
 - 5) Other domestic and foreign law : Not applicable
- EU classification information (confirmed classification result) : Not applicable
EU classification information (risk statements) ; Not applicable
EU classification information (safety statements) : Not applicable

Section 16 - Other Information

- 1) Source of data :
 - A chemical information MSDS Safety and Health Agency
 - National Institute of Environmental Research Chemical Information Systems
 - Korea Industrial Technology National Fire Hazardous Materials Information System
- 2) 1st Write date : 09/18/2014
- 3) Revision and The final revision
 - Revision number : 1
 - Final revision date : 08/11/2022

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