

Safety Data Sheet

1. Chemical product and company identification

Product name : 2-Ethoxyethanol

Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.
 Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
 Name of section : Business Administration Department, Reagent Division
 Telephone number : +81-3-6214-1090
 Facsimile number : +81-3-3241-1047
 Mail address : BC32@kanto.co.jp
 Reference No : 14124
 Recommended use : For research use only
 Restrictions on use : Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity (inhalation:vapors)	Category 4
	Serious eye damage/eye irritation	Category 2B
	Reproductive toxicity	Category 1B
	Specific target organ toxicity (single exposure)	Category 1 (central nervous system, blood, kidney, liver)
	Specific target organ toxicity (repeated exposure)	Category 1 (blood, testis)

Hazard
pictograms



Signal word : Danger

Hazard statements : Flammable liquid and vapor
 Causes eye irritation
 Harmful if inhaled
 May damage fertility or the unborn child
 Causes damage to organs (central nervous system, blood, kidney, liver)
 Causes damage to organs (blood, testis) through prolonged or repeated exposure

Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood.
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Keep container tightly closed.



	Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take action to prevent static discharges. Do not breathe mist/vapors. Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water . IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Call a POISON CENTER or doctor. IF exposed or concerned: Get medical advice/attention. Call a POISON CENTER or doctor if you feel unwell. Get medical advice/attention if you feel unwell. If eye irritation persists: Get medical advice/attention.
Storage	: Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture	: Substance
Synonyms	: Ethyl cellosolve, Ethylene glycol monoethyl ether

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
2-Ethoxyethanol	≥ 96	C4H10O2	Listed	203-804-1	110-80-5

4. First aid measures

First aid measures

First-aid measures after inhalation	: Remove the victim to fresh air, and make him blow his nose and gargle. If necessary, get medical treatment.
First-aid measures after skin contact	: Wash the affected areas under running water.
First-aid measures after eye contact	: Wash the affected areas under running water for at least 15 minutes. If necessary, get medical treatment.
First-aid measures after ingestion	: The chemical is volatile. Do not induce vomiting because it increases the risk of aspiration into the lungs. Get medical attention immediately. If necessary, rinse mouth with water.
Personal Protection in First Aid and Measures	: Rescuers should wear proper protective equipment like rubber gloves, goggles.



5. Fire fighting measures

- Suitable extinguishing media : Water, dry chemical powder, carbon dioxide, dry sand, alcohol resistant foam
- Unsuitable extinguishing media : Foam extinguisher
- Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.
Fight fire from windward.
Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Alcohol-resistant foam extinguisher is effective for a large scale fire.
- Personal protection (Emergency response) : Wear breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

- General measures : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Environmental precautions

- Environmental precautions : Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

- For containment : Absorb spill with inert material (e.g. diatomaceous earth, sand) and flush spillage area with copious amounts of water.
- Prevention Measures for Secondary Accidents : Remove nearby sources of ignition and prepare extinguishing media.

7. Handling and storage

Handling

- Technical measures : Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Fire is strictly prohibited.
Ventilate well at working places.
Prevent build-up of electrostatic charges (e.g. by grounding) .
- Precautions for safe handling : Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas.
Do not allow contact with oxidizing substances.

Storage

- Storage conditions : Store in a dark, cool place and tightly closed.
- Material used in packaging/containers : Glass, fluorine resin, stainless steel.
Do not use polyvinyl chloride resin, polystyrene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	5 ppm
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Remark (ACGIH)	Skin
Appropriate engineering controls Protective equipment	: Use with an enclosed system or a local exhaust ventilation.
Respiratory protection	: If necessary, wear chemical cartridge respirator with an organic vapor cartage
Hand protection	: Impervious protective gloves
Eye protection	: Safety goggles
Skin and body protection	: Protective clothing, protective boots

9. Physical and chemical properties

Physical state	: Liquid
Color	: Colorless.
Odor	: Ethereal
pH	: No data available
Melting point	: No data available
Freezing point	: -70 ° C
Boiling point	: 135.6 ° C
Flash point	: 45 ° C (C.C.)
Auto-ignition temperature	: 238 ° C
Decomposition temperature	: No data available
Flammability	: Flammable
Vapor pressure	: 0.5 kPa (20°C)
Relative density	: 0.925 - 0.935 (20/20°C)
Density	: No data available
Relative gas density	: 3.11
Solubility	: Water: Miscible. Organic solvents: Miscible with ethanol, diethyl ether, etc.
Partition coefficient n-octanol/water (log Pow)	: -0.32
Explosive limits (vol %)	: 1.8 - 14 vol %
Viscosity, kinematic	: 2.2 mm ² /s (20°C)
Particle characteristics	: No data available

10. Stability and reactivity

Reactivity	: May react with oxidizing substances.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Stable under normal conditions of use.
Conditions to avoid	: Light, heat.
Incompatible materials	: Oxidizing substances.
Hazardous decomposition products	: Carbon monoxide.



11. Toxicological information

Acute toxicity (oral)	: No classification rat LD50=2125mg/kg
Acute toxicity (dermal)	: No classification rat LD50=3900mg/kg
Acute toxicity (inhalation)	: No classification (gas) Harmful if inhaled (vapor) rat LC50=4119ppm/4h Classification not possible (dust, mist)
Skin corrosion/irritation	: No classification There are reports that mild-moderate erythema and mild desquamation were observed in a Draize test with rabbits, and that no irritation was observed after application of this undiluted substance in a skin irritation test according to EU guidelines.
Serious eye damage/irritation	: Causes eye irritation There is a report that in a Draize test with rabbits, although moderate corneal injury, moderate iritis, moderate to severe conjunctival irritation and necrosis of the nictitating membranes were observed, these showed a tendency to disappear within 7 days. From the above results, it was classified into category 2B.
Respiratory sensitization	: Classification not possible
Skin sensitization	: No classification There is a report that no sensitization was observed in a maximization test according to OECD criteria.
Germ cell mutagenicity	: No classification As for in vivo, it was negative in a mouse bone marrow micronucleus test. As for in vitro, it was negative in a bacterial reverse mutation test, and it was negative or weakly positive in mammalian cell gene mutation tests. However, many results were positive in chromosomal aberration tests and sister chromatid exchange tests.
Carcinogenicity	: Classification not possible
Reproductive toxicity	: May damage fertility or the unborn child In a reproductive toxicity test by continuous breeding with mice through the oral route, a significant decrease in fertility was observed at quite a high dose. In a teratogenicity test with mice by the oral route, at quite a high dose, although no maternal toxicity was observed, malformations such as fused or missing digits and kinked tail were observed. In a teratogenicity test with rats and rabbits by the inhalation route, although maternal toxicity was unknown, resorptions and cardiovascular malformations were observed at concentrations of 743 mg/m ³ in rats and 600-688 mg/m ³ in rabbits. In a teratogenicity test with rats by the dermal route, at a dose where no maternal toxicity was observed, an increase in 100% resorption, an increase in skeletal variations, a decrease in fetal weight, cardiovascular malformations and a decrease in the number of live fetuses per litter were observed. From the above, it was classified into category 1B.



STOT-single exposure	: Causes damage to organs (central nervous system, blood, kidney, liver) In humans, in the case of the oral route, there is a report that loss of consciousness, repeated tonic-clonic spasms and biochemically, metabolic acidosis were observed in accidental ingestion of this substance of ca. 40 mL, and that the person recovered consciousness after treatment, and that there was renal failure the next week, liver injury in the third week, and a complete recovery after 1 month, but complaints like nervous breakdown continued. There is a report that in a case of ingestion of ca. 100 mL, mental confusion, weakness, vomiting, deep and frequent respiration and severe metabolic acidosis were observed 8 hours after ingestion, and then the persons recovered. In experimental animals, in oral administration to rats, dyspnea, piloerection, weakness, lethargy, ataxia, writhing and coma, etc., were observed, and in severe cases or deaths, hemorrhage of the stomach and intestine, mild liver injury, severe kidney injury and hematuria were observed. From the above, it was classified into category 1 (central nervous system, blood, kidney, liver).
STOT-repeated exposure	: Causes damage to organs (blood, testis) through prolonged or repeated exposure In humans, in reports on occupational exposure by inhalation of this substance, there are multiple reports on the effects on the hemal system and hematopoietic tissue, and effects on sperm production. In experimental animals, in the tests in which rats and mice were exposed by inhalation at the high concentration corresponding to "Not classified" or were administered orally at the high dose corresponding to "Not classified", toxic effects on the hemal system and the male genetic organs such as testis were observed, and were considered to support effects on humans. From the above, it was classified into category 1 (blood, testis).
Aspiration hazard	: Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	: No classification Daphnia magna EC50>89.5mg/L/48h
Aquatic chronic	: No classification Daphnia magna NOEC>97mg/L/21-day

Persistence and degradability

Readily biodegradable
BOD : 76%

Bioaccumulative potential

Low bioconcentration
BCF : 3.2

Mobility in soil

High mobility
Koc : 1

Hazardous to the ozone layer

Ozone : Classification not possible



13. Disposal considerations

Ecological waste information	: Burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.
Contaminated container and packaging	: In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG)	: 1171
Proper Shipping Name (IMDG)	: ETHYLENE GLYCOL MONOETHYL ETHER
Packing group (IMDG)	: III
Transport hazard class(es) (IMDG)	: 3

Air transport(IATA)

UN-No. (IATA)	: 1171
Proper Shipping Name (IATA)	: Ethylene glycol monoethyl ether
Packing group (IATA)	: III
Transport hazard class(es) (IATA)	: 3

Marine pollutant	: Not applicable
MFAG-No	: 127

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources	: Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) . Handbook of Dangerous Substances Springer-Verlag Tokyo (1991) . Solvents Handbook, T, Asahara el, Kodansha Scientific Ltd. (1976) . NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.
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The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet(SDS) is prepared based on JIS Z7253.

