

Safety Data Sheet

1. Chemical product and company identification

Product name : 2-n-Butoxyethanol

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 : 14123
 Product numbers applied by the SDS : 05830, 14123
 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 4
Health hazards	Acute toxicity (oral)	Category 4
	Acute toxicity (dermal)	Category 3
	Acute toxicity (inhalation:vapors)	Category 2
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Reproductive toxicity	Category 2
	Specific target organ toxicity (single exposure)	Category 1 (blood, respiratory organs, liver, kidney)
	Specific target organ toxicity (single exposure)	Category 3 (narcosis)
	Specific target organ toxicity (repeated exposure)	Category 1 (blood)

Hazard pictograms



Signal word : Danger

Hazard statements : Combustible liquid
 Harmful if swallowed
 Toxic in contact with skin
 Causes skin irritation
 Causes serious eye irritation
 Fatal if inhaled



May cause drowsiness or dizziness
 Suspected of damaging fertility or the unborn child
 Causes damage to organs (blood, respiratory organs, liver, kidney)
 Causes damage to organs (blood) 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.
 - 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.
 - [In case of inadequate ventilation] wear respiratory protection.
- Response**
- : IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
 - IF ON SKIN: Wash with plenty of 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.
 - Immediately call a POISON CENTER or doctor.
 - Call a POISON CENTER or doctor if you feel unwell.
 - Get medical advice/attention if you feel unwell.
 - Rinse mouth.
 - If skin irritation occurs: Get medical advice/attention.
 - If eye irritation persists: Get medical advice/attention.
 - Take off immediately all contaminated clothing and wash it before reuse.
 - Take off contaminated clothing and wash it before reuse.
- Storage**
- : Store in a well-ventilated place.
 - Store in a well-ventilated place. Keep container tightly closed.
 - 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 : n-Butyl cellosolve, Ethylene glycol mono-n-butyl ether

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
2-n-Butoxyethanol	≥ 98	C6H14O2	Listed	203-905-0	111-76-2

4. First aid measures

First aid measures



First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately 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.
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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.
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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.
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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, acrylic resin.

8. Exposure controls / Personal protection equipment

ACGIH TWA	20 ppm
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Appropriate engineering controls : Use with an enclosed system or a local exhaust ventilation.

Protective equipment

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 : Aromatic
pH : No data available
Melting point : -70 ° C
Freezing point : No data available
Boiling point : 170.2 ° C
Flash point : 61 ° C (C.C.)
Auto-ignition temperature : 244 ° C
Decomposition temperature : No data available
Flammability : Flammable
Vapor pressure : 0.8 hPa (20°C)
Relative density : No data available
Density : 0.898 - 0.905 g/cm³ (20°C)
Relative gas density : 4.1
Solubility : Water: Miscible. Organic solvents: Miscible with acetone, diethyl ether, ethanol, etc.
Partition coefficient n-octanol/water (log Pow) : 0.83
Explosive limits (vol %) : 1.1 - 10.6 vol %
Viscosity, kinematic : 3.52 mm²/s (25°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)	: Harmful if swallowed rat LD50=470mg/kg
Acute toxicity (dermal)	: Toxic in contact with skin rabbit LD50=220mg/kg
Acute toxicity (inhalation)	: No classification (gas) Fatal if inhaled (vapor) rat LC50=450ppm/4h Classification not possible (dust, mist)
Skin corrosion/irritation	: Causes skin irritation There were multiple reports of skin irritation test with rabbits. It was reported that, in 2 tests equivalent to OECD TG 404, it was irritating, and that although severe and persistent erythema and severe edema were observed as the findings, they disappeared after 7 days. Based on the above results, it was classified into category 2.
Serious eye damage/irritation	: Causes serious eye irritation There are reports that, in eye irritation test with rabbits (OECD TG 405, GLP-compliant), although 24-27 hours after administration, corneal opacity score was 0.9, iritis score was 0.6, conjunctivitis score was 2.6, and conjunctival edema score was 1.8, they disappeared within 21 days. Based on the above result, it was classified into category 2A.
Respiratory sensitization	: Classification not possible
Skin sensitization	: No classification There is a report that it was negative in a maximization test with guinea pigs (OECD TG 406, GLP).
Germ cell mutagenicity	: No classification As for in vivo, it was negative in bone marrow micronucleus tests with rats and mice. As for in vitro, there were both negative and positive results in bacterial reverse mutation tests, and gene mutation tests and sister chromatid exchange tests with cultured mammalian cells, and it was negative in a chromosomal aberration test and a micronucleus test.
Carcinogenicity	: No classification IARC classifies it as group 3(not classifiable as to its carcinogenicity to humans).
Reproductive toxicity	: Suspected of damaging fertility or the unborn child In a teratogenicity test with rats by the inhalation route, a teratogenicity test with rabbits by the inhalation route (OECD TG 414) and a teratogenicity test with rats by the oral route (OECD TG 414), developmental effects were observed at doses where maternal toxicities developed. Therefore, it was classified into category 2.



STOT-single exposure	: Causes damage to organs (blood, respiratory organs, liver, kidney) May cause drowsiness or dizziness In humans, respiratory tract irritation, vomiting, dizziness, lethargy, coma, dyspnea, mydriasis, metabolic acidosis, decreased hemoglobin and hematuria were reported by the inhalation and oral route, and hypokalemia, increased serum creatinine concentration, significantly increased urinary excretion of oxalate ester crystals, hypoxemia, pulmonary edema, adult respiratory distress syndrome and nonhemolytic hypochromic anemia with thrombocytopenia were reported by oral ingestion. In the case of dermal application, there is a report that prostration, hypothermia, hemoglobinuria, narcosis, failure of respiration, renal impairment, modified lungs (no detail description), congestion of the liver, necrotic foci with mesenchymatous reactions, inconstant steatosis, congestion of the spleen, enlarged kidney with hemoglobinemic nephrosis and cutaneous lesions including necrosis were observed at 72-225 mg/kg for rabbits. Besides, these findings were confirmed within the guidance value range of category 1. From the above, it was classified into category 1 (blood, respiratory organs, liver, kidney), category 3 (narcosis).
STOT-repeated exposure	: Causes damage to organs (blood) through prolonged or repeated exposure There was no available information on effects from repeated exposure in humans. In experimental animals, in a 13-week administration test with rats by drinking water, effects on the hemal system and decreased sperm concentrations were observed at a dose equivalent to category 2. By the inhalation route, in 14-week or 2-year inhalation exposure tests with rats or mice, findings of anemia were observed from the low concentration equivalent to category 1, and the effects tended to be more intense in rats than in mice, and in females rather than in males. Besides, this substance caused no obvious effects on the testis both in human and experimental animals. From the above, it was classified into category 1 (blood).
Aspiration hazard	: Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	: No classification Cyprinodon variegatus LC50=116mg/L/96h
Aquatic chronic	: No classification

Persistence and degradability

Readily biodegradable
BOD : 96.0%

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) : 2810
Proper Shipping Name (IMDG) : TOXIC LIQUID, ORGANIC, N.O.S.
Packing group (IMDG) : II
Transport hazard class(es) : 6.1

(IMDG)

Air transport(IATA)

UN-No. (IATA) : 2810
Proper Shipping Name (IATA) : Toxic liquid, organic, n.o.s.
Packing group (IATA) : II
Transport hazard class(es) : 6.1

(IATA)

Marine pollutant : Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollutant category : Y
MFAG-No : 153

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 : Solvents Handbook, T, Asahara el, Kodansha Scientific Ltd.
(1976) .
Handbook of Dangerous Substances Springer-Verlag Tokyo
(1991) .
Handbook of 17322 Chemical Products, The Chemical Daily Co.
(2022) .
NITE Chemical Risk Information Platform (NITE-CHRIP), National
Institute of Technology and Evaluation.

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.

