

Chemical Safety Data Sheet MSDS / SDS

CHLOROETHANE

Revision Date:2024-03-16 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name : CHLOROETHANE
CBnumber : CB5227785
CAS : 75-00-3
EINECS Number : 200-830-5
Synonyms : Chloroethane,Ethyl Chloride

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.
Uses advised against : none

Company Identification

Company : Chemicalbook
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone : 400-158-6606

SECTION 2: Hazards identification

Classification of the substance or mixture

Gases under pressure: Compressed gas
Flammable gases, Category 1A, Flammable gas
Carcinogenicity, Category 2
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 3

Label elements

Pictogram(s)

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Signal word : Danger

Hazard statement(s)

H220 Extremely flammable gas
H224 Extremely flammable liquid and vapour
H225 Highly Flammable liquid and vapour
H280 Contains gas under pressure; may explode if heated
H302 Harmful if swallowed

H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness
H351 Suspected of causing cancer
H370 Causes damage to organs
H371 May cause damage to organs
H372 Causes damage to organs through prolonged or repeated exposure
H373 May cause damage to organs through prolonged or repeated exposure
H412 Harmful to aquatic life with long lasting effects

Precautionary statement(s)

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P281 Use personal protective equipment as required.
P311 Call a POISON CENTER or doctor/physician.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P410+P403 Protect from sunlight. Store in a well-ventilated place.
P501 Dispose of contents/container to.....

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P203 Obtain, read and follow all safety instructions before use.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P273 Avoid release to the environment.

Response

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 In case of leakage, eliminate all ignition sources.
P318 IF exposed or concerned, get medical advice.

Storage

P410+P403 Protect from sunlight. Store in a well-ventilated place.
P403 Store in a well-ventilated place.

P405 Store locked up.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards

no data available

SECTION 3: Composition/information on ingredients

Substance

Product name	: CHLOROETHANE
Synonyms	: Chloroethane, Ethyl Chloride
CAS	: 75-00-3
EC number	: 200-830-5
MF	: C ₂ H ₅ Cl
MW	: 64.51

SECTION 4: First aid measures

Description of first aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Vapor causes drunkenness, anesthesia, possible lung injury. Liquid may cause frostbite on eyes and skin. (USCG, 1999)

Indication of any immediate medical attention and special treatment needed

Irrigate eyes with water. Wash contaminated areas of body with soap and water.

SECTION 5: Firefighting measures

Extinguishing media

Water fog, carbon dioxide, dry chemical. For large fire it is best to allow material to burn while cooling surrounding equipment. Stop flow of

ethyl chloride.

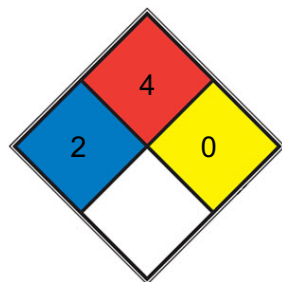
Specific Hazards Arising from the Chemical

Special Hazards of Combustion Products: Toxic and irritating gases are generated in fires. Behavior in Fire: Containers may explode. (USCG, 1999)

Advice for firefighters

Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out. In other cases extinguish with powder, carbon dioxide. In case of fire: keep cylinder cool by spraying with water.

NFPA 704



HEALTH 2 Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. [diethyl ether](#), ammonium phosphate, iodine)

FIRE 4 Will rapidly or completely vaporize at normal atmospheric pressure and temperature, or is readily dispersed in air and will burn readily. Includes pyrophoric substances. Flash point below room temperature at 22.8 °C (73 °F). (e.g. acetylene, propane, [hydrogen gas](#))

REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N2](#))

SPEC.
 HAZ.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Ventilation. Do NOT let this chemical enter the environment.

Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Ventilation. Do NOT let this chemical enter the environment.

Methods and materials for containment and cleaning up

Waste water treatment: evaporation from water at 25 deg C of 1 ppm solution (still air, avg depth 6.5 cm), 50% after 21 min, 90% after 79 min

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding) if in liquid state. Use non-sparking handtools. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Fireproof. MATERIALS WHICH ARE TOXIC AS STORED OR WHICH CAN DECOMPOSE INTO TOXIC COMPONENTS ... SHOULD BE STORED IN A COOL WELL VENTILATED PLACE, OUT OF THE DIRECT RAYS OF THE SUN, AWAY FROM AREAS OF HIGH FIRE HAZARD, AND SHOULD BE PERIODICALLY INSPECTED. INCOMPATIBLE MATERIALS SHOULD BE ISOLATED ...

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 100 ppm as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans). MAK: skin absorption (H); carcinogen category: 3B. EU-OEL: 268 mg/m³, 100 ppm as TWA

Biological limit values

no data available

Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Cold-insulating gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Physical state	Colorless gas
Colour	COLORLESS LIQUID
Odour	Ethereal odor
Melting point/freezing point	-31°C(lit.)
Boiling point or initial boiling point and	96°C/4mmHg(lit.)

boiling range

Flammability	Flammable Gas
Lower and upper explosion limit/flammability limit	Lower limit 3.8% - Upper limit 15.4%
Flash point	41°C(lit.)
Auto-ignition temperature	966° F (USCG, 1999)
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	0.279 cP at 10 deg C
Solubility	Soluble in ethanol, ether (U.S. EPA, 1985); miscible with chlorinated hydrocarbons such as chloroform, carbon tetrachloride, and tetrachloroethane.
Partition coefficient n-octanol/water	log Kow= 1.43
Vapour pressure	32.29 psi (55 °C)
Density and/or relative density	2.22 (气)
Relative vapour density	2.22 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

3800 ppm [Based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.]

Decomposes on heating and on burning. This produces toxic gases of hydrogen chloride (see ICSC 0163) and phosgene (see ICSC 0007).

Chemical stability

At low temp or under increased pressure, ethyl chloride is a mobile, very volatile liquid.

Possibility of hazardous reactions

FLAMMABLE GAS AT ORDINARY TEMP AND PRESSURE. The gas is heavier than air and may travel along the ground; distant ignition possible. ETHYL CHLORIDE is heat sensitive. This compound will hydrolyze in the presence of alkalis and water. It reacts with water or steam to produce toxic and corrosive fumes. It can also react vigorously with oxidizing materials. The vapor forms highly flammable mixtures with air. A mixture of this compound with potassium is shock-sensitive. Contact with chemically active metals such as Na, K, Ca, powdered Al, Zn and Mg may result in violent reactions. (NTP, 1992)

Conditions to avoid

no data available

Incompatible materials

Can react vigorously with oxidizing materials.

Hazardous decomposition products

Thermally stable to 400 deg C; thermal splitting yields ethylene and hydrogen chloride.

SECTION 11: Toxicological information

Acute toxicity

- Oral: no data available
- Inhalation: LC50 Rat inhalation 152 mg/l/2 hr
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Evaluation: No epidemiological data relevant to the carcinogenicity of chloroethane. There is limited evidence in experimental animals for the carcinogenicity of chloroethane. Overall evaluation: Chloroethane is not classifiable as to its carcinogenicity to humans (Group 3).

Reproductive toxicity

No studies were located regarding reproductive or developmental effects following ethyl chloride inhalation exposure in humans. Several animal studies found no reproductive effects caused by ethyl chloride exposure. An animal study reported a decrease in uterine weights, while another study reported minimal evidence of fetotoxicity (increase in centers of unossified bones of the skull) from inhalation exposure to ethyl chloride.

STOT-single exposure

The substance is mildly irritating to the eyes, skin and respiratory tract. Rapid evaporation of the liquid may cause frostbite. The substance may cause effects on the central nervous system. Exposure far above the OEL could cause unconsciousness, cardiac dysrhythmia and death.

STOT-repeated exposure

no data available

Aspiration hazard

A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: Ethyl chloride, present at 1.84 and 4.19 mg/l, reached 1% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 2 mg/l and the closed bottle test(1).

Bioaccumulative potential

Food chain concn potential: none

Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc for ethyl chloride can be estimated to be 24(SRC). According to a classification scheme(2), this estimated Koc value suggests that ethyl chloride is expected to have very high mobility in soil.

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN1037 (For reference only, please check.)

IMDG: UN1037 (For reference only, please check.)

IATA: UN1037 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ETHYL CHLORIDE (For reference only, please check.)

IMDG: ETHYL CHLORIDE (For reference only, please check.)

IATA: ETHYL CHLORIDE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 2.1 (For reference only, please check.)

IMDG: 2.1 (For reference only, please check.)

IATA: 2.1 (For reference only, please check.)

Packing group, if applicable

ADR/RID: (For reference only, please check.)

IMDG: (For reference only, please check.)

IATA: (For reference only, please check.)

Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

PICCS

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pagelD=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

Use of alcoholic beverages enhances the harmful effect. Rinse contaminated clothing with plenty of water because of fire hazard. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Turn leaking cylinder with the leak up to prevent escape of gas in liquid state.

Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.