Chemical Safety Data Sheet MSDS / SDS

Chloroethylene SDS

Revision Date:2024-04-25 Revision Number:1

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

Product identifier

Product name: Chloroethylene

CAS: 75-01-4

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.in

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SECTION 2: Hazards identification

Classification of the substance or mixture

Gases under pressure: Liquefied gas
Flammable gases, Category 1A, Flammable gas

Carcinogenicity, Category 1A

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H220 Extremely flammable gas
H350 May cause cancer

Precautionary statement(s)

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/...

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 which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Chloroethylene
Common names and synonyms:	Chloroethylene
CAS number:	75-01-4
EC number:	200-831-0
Concentration:	100%

SECTION 4: First aid measures

Description of necessary 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.

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/effects, acute and delayed

INHALATION: high concentrations cause dizziness, anesthesia, lung irritation. SKIN: may cause frostbite; phenol inhibitor may be absorbed through skin if large amounts of liquid evaporate. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial

respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Carbon tetrachloride and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

If material on fire or involved in fire: Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible.

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Forms highly toxic combustion products such as hydrogen chloride, phosgenic, and carbon monoxide. Behavior in Fire: Container may explode in fire. Gas is heavier than air and may travel considerable distance to a source of ignition and flash back. (USCG, 1999)

Special protective actions for fire-fighters

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, water spray. See Notes. In case of fire: keep cylinder cool by spraying with water. Combat fire from a sheltered position.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Ventilation. Remove all ignition sources. Remove vapour cloud with fine water spray. NEVER direct water jet on liquid.

Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Ventilation. Remove all ignition sources.

Methods and materials for containment and cleaning up

Land Spill: Construct barriers to contain spill. Absorb small amounts of spill with natural or synthetic sorbents, shovel into containers

with covers.

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. 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. Separated from incompatible materials. See Chemical Dangers. Cool. Store only if stabilized.Store in cool, dry, well-ventilated location. Separate from oxidizing materials.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 1 ppm as TWA; A1 (confirmed human carcinogen).EU-OEL: 2.6 mg/m3, 1 ppm as TWA.MAK: carcinogen category: 1

Biological limit values

no data available

Appropriate engineering 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, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles or eye protection in combination with breathing protection.

Skin protection

Protective gloves. 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 and safety characteristics

Physical state:	Vinyl chloride is a colorless gas with a sweet odor. Easily ignited. Shipped as a liquefied gas under own vapor pressure. Contact with the unconfined liquid may cause frostbite by evaporative cooling. Leaks may be liquid or vapor. Vapors are heavier than air. May asphyxiate by the displacement of air. Under prolonged exposure to fire or intense heat the containers may rupture violently and rocket. Suspected carcinogen. Used to make plastics, adhesives, and other chemicals.
Colour:	Colorless gas or liquid (below 77 degrees F) ... [Note: Shipped as a liquefied compressed gas.]
Odour:	Ethereal odor
Melting point/freezing point:	-153.8°C
Boiling point or initial boiling point and boiling range:	-13.4°C(lit.)
Flammability:	Flammable Gas
Lower and upper explosion limit/flammability limit:	Lower flammable limit: 3.6% by volume; Upper flammable limit: 33.0% by volume
Flash point:	-61°C
Auto-ignition temperature:	882° F (USCG, 1999)
Decomposition temperature:	no data available

pH:	no data available
Kinematic viscosity:	Viscosity, gas at 101.325 kPa at 20 deg C is 0.01072 cP; viscosity, liquid at -20 deg C is 0.280 cP
Solubility:	Slightly soluble (NTP, 1992)
Partition coefficient n-octanol/water:	log Kow = 1.62 (est)
Vapour pressure:	3877.5 mm Hg (USCG, 1999)
Density and/or relative density:	0.911g/mLat 25°C(lit.)
Relative vapour density:	2.15 (Air = 1)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

NIOSH considers vinyl chloride to be a potential occupational carcinogen.
The substance can form explosive peroxides under specific circumstances. The substance readily polymerizes due to heating and under the influence of air, light and on contact with a catalyst, strong oxidizing agents and metals such as copper and aluminium. This generates fire or explosion hazard. Decomposes on burning. This produces toxic and corrosive fumes of hydrogen chloride and phosgene. Attacks iron and steel in the presence of moisture.
Decomposes on heating. This produces toxic fumes including hydrogen chloride and phosgene. Reacts violently with fluorine.

Chemical stability

May produce peroxides.

Possibility of hazardous reactions

Dangerous, when exposed to heat or flame, or oxidizers. Large fires of this material are practically inextinguishable.The gas is heavier than air and may travel along the ground; distant ignition possible. Vapours are uninhibited and may polymerize, causing blockage of vents.,Dust explosion possible if in powder or granular form, mixed with air.VINYL CHLORIDE is peroxidizable. Forms explosive polymeric peroxides in contact with air (in the presence of any of a variety of catalysts) [Bretherick 1979. p. 164]. Long

storage in contact with air increases the concentration of the polyperoxides to hazardous levels [MCA Case History 1551. 1969]. The peroxides may initiate exothermic polymerization of the remaining material [Handling Chemicals Safely 1980.p. 958; Bretherick 1979. p. 160]. Light-sensitive. Many oxidizing agents apparently initiate polymerization (oxides of nitrogen, O2, etc.). May react with very hot water or steam to produce toxic fumes.

Conditions to avoid

no data available

Incompatible materials

On treatment with strong alkalis at high temperatures it loses hydrogen chloride.

Hazardous decomposition products

Decomposes on burning. This produces toxic and corrosive fumes of hydrogen chloride and phosgene.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 500 mg/kg

Inhalation: LC50 Rabbit inhalation 295 mg/L/ 2hr

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

EPA: Known human carcinogen. IARC: Carcinogenic to humans . NTP: Known to be a human carcinogen

Reproductive toxicity

Several case reports suggest that male sexual performance may be affected by vinyl chloride. However, these studies are limited by lack of quantitative exposure information and possible co-occurring exposure to other chemicals. Several epidemiological studies have reported an association between vinyl chloride exposure in pregnant women and an increased incidence of birth defects, while other studies have not reported similar findings. Epidemiological studies have suggested an association between men occupationally exposed to vinyl chloride and miscarriages in their wives' pregnancies although other studies have not supported these findings. Testicular damage and decreased male fertility have been reported in rats exposed to low levels for up to 12 months. Animal studies have reported decreased fetal weight and birth defects at levels that are also toxic to maternal animals in the offspring of rats exposed to vinyl chloride through inhalation.

STOT-single exposure

The liquid may cause frostbite. The substance is irritating to the eyes. The substance may cause effects on the central nervous system. This may result in lowering of consciousness, convulsions and seizures. Medical observation is indicated.

STOT-repeated exposure

The substance may have effects on the liver, spleen, blood, peripheral blood vessels and tissue and bones of the fingers. Animal tests show that this substance possibly causes toxicity to human reproduction or development. This substance is carcinogenic to humans.

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: Limited existing data indicate that vinyl chloride is resistant to biodegradation in aerobic systems(1,2). Vinyl chloride, present at 2.04 and 10.2 mg/L, reached 16 and 3% of its theoretical BOD, respectively, in 28 days using an activated sludge inoculum at 1 drop/L in the Japanese MITI test(3). Aerobic biodegradation of vinyl chloride was measured in sediment at two sites in Denmark; >99% was removed in 204 and 274 days(4). The biodegradation half-life of vinyl chloride in aerobic waters was reported as 28 days(5). Vinyl chloride had a biodegradation rate of 1.456 ug/g soil/hr in soil from Skellingsted landfill in Holback, Denmark, incubated with methane(6).

Bioaccumulative potential

The BCF value of vinyl chloride in golden ide fish was reported as <10(1). The BCF value of vinyl chloride in green algae was reported as 40(2). According to a classification scheme(3), these BCFs suggest that bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

The Koc of vinyl chloride has been reported to be 57(1). According to a classification scheme(2), this Koc value suggests that vinyl chloride is expected to have 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: UN1086 (For reference only, please check.)
IMDG: UN1086 (For reference only, please check.)
IATA: UN1086 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: VINYL CHLORIDE, STABILIZED (For reference only, please check.)
IMDG: VINYL CHLORIDE, STABILIZED (For reference only, please check.)
IATA: VINYL CHLORIDE, STABILIZED (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?pageID=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

Depending on the degree of exposure, periodic medical examination is suggested. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert. Large fires of this material are practically inextinguishable: use water spray or fog.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any