

# SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0

Creation Date: Aug 20, 2017

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## 1. Identification

### 1.1 GHS Product identifier

Product name	Dichloroethane
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### 1.2 Other means of identification

Product number	–
Other names	–

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses	For industry use only. Volatile organic compounds
Uses advised against	no data available

## 2. Hazard identification

### 2.1 Classification of the substance or mixture

no data available

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)	no data available
Signal word	no data available
Hazard statement(s)	no data available
Precautionary statement(s)	

Prevention	no data available
Response	no data available
Storage	no data available
Disposal	no data available

2.3Other hazards which do not result in classification

no data available

3.Composition/information on ingredients

3.1Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Dichloroethane	Dichloroethane	1300-21-6	none	100%

4.First-aid measures

4.1Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Fresh air, rest. Refer for medical attention.

In case of skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

In case of eye contact

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

If swallowed

Rinse mouth. Refer for medical attention .

4.2Most important symptoms/effects, acute and delayed

INHALATION: Irritation of respiratory tract. Salivation, sneezing, coughing, dizziness, nausea, and vomiting. EYES: Irritation, lacrimation, and reddening of conjunctiva. SKIN: Irritation. Prolonged or repeated skin contact can produce a slight burn. INGESTION: Ingestion incidental to industrial handling is not considered to be a problem. Swallowing of substantial amounts could cause nausea, vomiting, faintness, drowsiness, cyanosis, and circulatory failure. (USCG, 1999)

4.3Indication of immediate medical attention and special treatment needed, if necessary

Treatment: Treatment is largely supportive. Watch for respiratory depression and dysrhythmias. Obtain arterial blood gases. Administer oxygen if there is evidence of altered mental status or dyspnea. Treat hypotension with volume expansion and vasopressor. Use lidocaine or beta-adrenergic blockers for ventricular dysrhythmias. /Dermal exposure/: Remove contaminated clothing. ... Wash affected area with soap and copious amounts of water. /Ocular exposure/: Irrigate the eye for 15 to 20 minutes. Obtain ophthalmic consultation if symptoms persist. After ingestion: Simple aspiration with a nasogastric tube may be effective because these compounds are liquid. Activated charcoal is probably ineffective. /Inhalation/: Move patient away from the contaminated area. Provide a source of oxygen and prepare for mechanical ventilation. Enhancement of Elimination: Hemodialysis or hemoperfusion is not likely to be useful because of the lipophilic properties of these solvents. Hyperbaric oxygen is experimental. ... Antidotes: Acetylcysteine may restore glutathione stores depleted by the production of free radicals; however, its role in limiting carbon tetrachloride-induced hepatotoxicity remains investigational. Supportive Care: Watch for cardiac dysrhythmias, aspiration pneumonitis, hepatotoxicity, and hypoxic encephalopathy. Monitor for dysrhythmias for at least 24 hours and for hepatorenal failure for approximately 3 days. Obtain a chest radiograph, arterial blood gas, ECG, serum creatinine, and hepatic aminotransferase. Check electrolyte imbalance daily. Treat renal failure with dialysis and hepatic failure with fresh frozen plasma, vitamin K, a low-protein diet, neomycin, and lactulose. Watch fluid and electrolyte balance. /Halogenated hydrocarbons/

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## 5.Fire-fighting measures

### 5.1Extinguishing media

#### Suitable extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2Specific hazards arising from the chemical

Special Hazards of Combustion Products: When heated to decomposition emits highly toxic fumes to phosgene. Behavior in Fire: Explosion hazard (USCG, 1999)

### 5.3Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

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## 6.Accidental release measures

### 6.1Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

### 6.2Environmental precautions

Personal protection: self-contained breathing apparatus. Do NOT wash away into sewer. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### 6.3Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas; Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided; Methods and materials for containment and cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

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## 7.Handling and storage

### 7.1Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

## 7.2 Conditions for safe storage, including any incompatibilities

Fireproof. See Chemical Dangers. Cool. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

Recommended Exposure Limit: 10 Hour Time-Weighted Average: 100 ppm (400 mg/cu m).

NIOSH considers ethylene dichloride; hexachloroethane; 1,1,2,2-tetrachloroethane; and 1,1,2-trichloroethane; to be potential occupational carcinogens. Additionally, NIOSH recommends that ... 1,1-dichloroethane ... be treated in the workplace with caution because of ... structural similarity to the four chloroethanes shown to be carcinogenic in animals.

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Respiratory protection

Wear dust mask when handling large quantities.

#### Thermal hazards

no data available

## 9. Physical and chemical properties

Physical state	clear liquid
Colour	Colorless, oily liquid
Odour	Aromatic ethereal odor
Melting point/	-35°C

freezing point	
Boiling point or initial boiling point and boiling range	81–85°C
Flammability	Class IB Flammable Liquid: Fl.P. below 22.78° C and BP at or above 37.78° C.Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit / flammability limit	Lower flammable limit: 5.4% by volume; Upper flammable limit: 11.4% by volume
Flash point	13°C
Auto-ignition temperature	457.78° C (USCG, 1999)
Decomposition temperature	no data available
pH	Neutral
Kinematic viscosity	0.464 mPa s at 25° C; 0.362 mPa s at 50° C
Solubility	less than 1 mg/mL at 20° C
Partition coefficient n-octanol/water (log value)	log Kow = 1.79
Vapour pressure	83.9mmHg at 25° C
Density and/or relative density	1.253
Relative vapour	3.44 (Relative to Air)

density	
Particle characteristics	no data available

10.Stability and reactivity

10.1Reactivity

no data available

10.2Chemical stability

Stable under recommended storage conditions.

10.3Possibility of hazardous reactions

A very dangerous fire hazard ... when exposed to heat or flame; can react vigorously with oxidizing materials.The vapour is heavier than air and may travel along the ground; distant ignition possible.1,1-DICHLOROETHANE can react vigorously with oxidizing materials. It is incompatible with strong bases. Contact with strong caustics will cause formation of flammable and toxic gas. It will attack some forms of plastics, rubber and coatings.

10.4Conditions to avoid

no data available

10.5Incompatible materials

Incompatible materials: Oxidizing agents

10.6Hazardous decomposition products

When heated to decomposition, it emits toxic fumes of carbon monoxide, carbon dioxide, hydrogen chloride gas, and phosgene.

11.Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 725 mg/kg
- Inhalation: LC50 Mouse inhalation 17300 ppm/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

CLASSIFICATION: C; possible human carcinogen. BASIS FOR CLASSIFICATION: Based on no human data and limited evidence of carcinogenicity in two animal species (rats and mice) as shown by an increased incidence of mammary gland adenocarcinomas and hemangiosarcomas in female rats and an increased incidence of hepatocellular carcinomas and benign uterine polyps in mice. HUMAN CARCINOGENICITY DATA: None. ANIMAL CARCINOGENICITY DATA: Limited.

#### Reproductive toxicity

No information is available on the reproductive or developmental effects of ethylidene dichloride in humans. Retarded fetal development (but no malformations) was observed in animals from inhalation exposure to ethylidene dichloride.

#### STOT-single exposure

no data available

#### STOT-repeated exposure

no data available

#### Aspiration hazard

no data available

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## 12. Ecological information

### 12.1 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

### 12.2 Persistence and degradability

AEROBIC: Halogenated aliphatic hydrocarbons are generally considered to be resistant to biodegradation(1). Using an aerobic static-screening-flask test method with a municipal waste water sewage inoculum, 5 and 10 ppm 1,1-dichloroethane incubated for 7 days resulted in 50 and 29% degradation, and 19 and 4% evaporation, respectively(2). No degradation was detected when 1,1-dichloroethane was incubated for 8-16 weeks with uncontaminated samples of subsurface material taken from positions immediately above and below the water table at Pickett, OK and Fort Polk, LA(3). Using well monitoring data from a landfill with a contamination history, the half-life of 1,1-dichloroethane under sulfate-reducing conditions at 10°C was approximated to be 115 days(4). A soil microcosm study simulating gas composition in landfill soil covers found that 1,1-dichloroethane was degraded, but at a rate much slower than 1,2-dichloroethane(5).

### 12.3 Bioaccumulative potential

An estimated BCF of 7 was calculated in fish for 1,1-dichloroethane(SRC), using a log Kow of 1.79(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC). All of the chloroethanes have an elimination half-life of < 2 days as measured by whole body levels in exposed bluegills(4).

### 12.4 Mobility in soil

The measured Koc of 1,1-dichloroethane in soil has been reported to be 30(1,2). Sorption studies using sea sediment taken from the Belgian Continental Shelf of the North Sea in October 1993 determined a Koc of 9.2(3). According to a classification scheme(4), these Koc values suggest that 1,1-dichloroethane is expected to have very high mobility in soil. 1,1-Dichloroethane was readily leached from material representative of waste at land disposal sites(5) and was found in leachate from a simulated landfill lysimeter used to study the codisposal of metal plating sludge and municipal waste(6).

### 12.5 Other adverse effects

no data available

### 13. Disposal considerations

#### 13.1 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.

### 14. Transport information

#### 14.1 UN Number

ADR/RID: UN1184	IMDG: UN1184	IATA: UN1184
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#### 14.2 UN Proper Shipping Name

ADR/RID: ETHYLENE DICHLORIDE
IMDG: ETHYLENE DICHLORIDE
IATA: ETHYLENE DICHLORIDE

#### 14.3 Transport hazard class(es)

ADR/RID: 3	IMDG: 3	IATA: 3
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#### 14.4 Packing group, if applicable

ADR/RID: II	IMDG: II	IATA: II
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#### 14.5 Environmental hazards

ADR/RID: no	IMDG: no	IATA: no
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#### 14.6 Special precautions for user

no data available

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

no data available

### 15. Regulatory information

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



Chemical name	Common names and synonyms	CAS number	EC number
Dichloroethane	Dichloroethane	1300-21-6	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Not Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Not Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Not Listed.

## 16.Other information

### Information on revision

Creation Date	Aug 20, 2017
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### 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](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/>

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*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 damage resulting from handling or from contact with the above product.*