

Material Safety Data Sheet

1,2-Dichloroethane

ACC# 09390

Section 1 - Chemical Product and Company Identification

MSDS Name: 1,2-Dichloroethane

Catalog Numbers: AC113360000, AC113360010, AC113360025, AC113360250, AC167760000, AC167760025, AC167760250, AC167765000, AC326840000, AC326840010, AC326841000, AC326842500, AC327860000, AC327860010, AC406800000, AC406800010, AC406800025, AC406800040, AC406800200, AC406800250, AC406810000, AC406810010, AC406810030, AC406810500, AC406815000, AC406820000, AC406820010, AC406820025, AC406820250, AC406830000, S79997, 11336-1000, 40682-0040, 40682-5000, 40683-5000, BP1100-500, E175-20, E175-4, E175-500, E175J4, E175RS19, E175RS50, E190-4

Synonyms: Ethylene dichloride; 1,2-Ethylene dichloride; Glycol dichloride; EDC; sym-Dichloroethane; 1,2-Dichloroethane; Ethylene chloride.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
107-06-2	1,2-Dichloroethane	>99	203-458-1

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 13.3 deg C.

Warning! Flammable liquid and vapor. Causes eye, skin, and respiratory tract irritation. May be harmful if swallowed. May cause central nervous system depression. May cause cancer based on animal studies. May cause liver damage.

Target Organs: Central nervous system, liver, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation. Vapors may cause eye irritation.

Skin: Causes skin irritation. May be absorbed through the skin.

Ingestion: May cause central nervous system depression, kidney damage, and liver damage. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause effects similar to those for inhalation exposure.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause liver and kidney damage. Vapors may cause dizziness or suffocation. Can produce delayed pulmonary edema. Exposure to high concentrations may produce narcosis, nausea and loss of consciousness.

Chronic: Possible cancer hazard based on tests with laboratory animals. Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated eye contact may cause conjunctivitis. May cause liver and kidney damage. Effects may be delayed.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Water may be ineffective. Do NOT use straight streams of water.

Flash Point: 13.3 deg C (55.94 deg F)

Autoignition Temperature: 412.8 deg C (775.04 deg F)

Explosion Limits, Lower: 6.2%

Upper: 15.9%

NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat, sparks and flame. Avoid breathing vapor or mist.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Storage under a nitrogen blanket has been recommended.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
1,2-Dichloroethane	10 ppm TWA	1 ppm TWA; 4 mg/m ³ TWA 50 ppm IDLH	50 ppm TWA; 100 ppm Ceiling

OSHA Vacated PELs: 1,2-Dichloroethane: 1 ppm TWA; 4 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: colorless

Odor: chloroform-like

pH: Not available.

Vapor Pressure: 100 mm Hg @29 deg C

Vapor Density: 3.4 (Air=1)

Evaporation Rate:6.5 (Butyl acetate=1)

Viscosity: Not available.

Boiling Point: 81 - 85 deg C

Freezing/Melting Point:-35 deg C

Decomposition Temperature:Not available.

Solubility: Insoluble.

Specific Gravity/Density:1.25 (Water=1)

Molecular Formula:C₂H₄Cl₂

Molecular Weight:98.96

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Light, ignition sources, excess heat, electrical sparks.

Incompatibilities with Other Materials: Aluminum, bases, alkali metals, ketones, organic peroxides, nitric acid, strong oxidizing agents, strong reducing agents, liquid ammonia, amines.

Hazardous Decomposition Products: Hydrogen chloride, phosgene, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 107-06-2: KI0525000

LD50/LC50:

CAS# 107-06-2:

- Draize test, rabbit, eye: 63 mg Severe;
- Draize test, rabbit, eye: 500 mg/24H Mild;
- Draize test, rabbit, skin: 500 mg/24H Mild;
- Inhalation, mouse: LC50 = 1060 mg/m³/6H;
- Inhalation, rat: LC50 = 1000 ppm/7H;
- Inhalation, rat: LC50 = 5100 mg/m³/6H;
- Oral, mouse: LD50 = 413 mg/kg;
- Oral, mouse: LD50 = 413 mg/kg;
- Oral, rabbit: LD50 = 860 mg/kg;
- Oral, rabbit: LD50 = 0.7 mL/kg;
- Oral, rat: LD50 = 500 mg/kg;
- Skin, rabbit: LD50 = 2800 mg/kg;

Carcinogenicity:

CAS# 107-06-2:

- **ACGIH:** Not listed.
- **California:** carcinogen, initial date 10/1/87
- **NTP:** Suspect carcinogen
- **IARC:** Group 2B carcinogen

Epidemiology: See actual RTECS.

Teratogenicity: See actual entry in RTECS for complete information.

Reproductive Effects: See actual entry in RTECS for complete information.

Mutagenicity: See actual entry in RTECS for complete information.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Water flea Daphnia: 218mg/L; 48H; Fish: Bluegill/Sunfish: 430mg/L; 96H; StaticFish: Fathead Minnow: 136mg/L; 96H; Static No data available.

Environmental: Terrestrial: Smaller releases on land will evaporate fairly rapidly. Larger releases may leach rapidly through sandy soil into groundwater. Aquatic: If released to surface water, its primary loss will be by evaporation. The half-life for evaporation will depend on wind and mixing conditions and was of the order of hours in the laboratory. However a modeling study using the EXAMS model for a eutrophic lake gave a half-life of 10 days. Atmospheric: Will degrade by reaction with hydroxyl radicals formed photochemically in the atmosphere. Half-life over one month.

Physical: Not expected to biodegrade or bioconcentrate.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3.

Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series:

CAS# 107-06-2: waste number U077.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	ETHYLENE DICHLORIDE	ETHYLENE DICHLORIDE
Hazard Class:	3	3(6.1)
UN Number:	UN1184	UN1184
Packing Group:	II	II
Additional Info:		FLASHPOINT 13 C

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 107-06-2 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 107-06-2: Effective 6/1/87, Sunset 6/1/97

Chemical Test Rules

CAS# 107-06-2: 40 CFR 799.5115

Section 12b

CAS# 107-06-2: Section 4, 0.1 % de minimus concentration

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 107-06-2: 100 lb final RQ; 45.4 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPO.

SARA Codes

CAS # 107-06-2: immediate, delayed, fire.

Section 313

This material contains 1,2-Dichloroethane (CAS# 107-06-2, >99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

Clean Air Act:

CAS# 107-06-2 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 107-06-2 is listed as a Hazardous Substance under the CWA. CAS# 107-06-2 is listed as a Priority Pollutant under the Clean Water Act. CAS# 107-06-2 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 107-06-2 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe

Drinking Water Act:

WARNING: This product contains 1,2-Dichloroethane, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: CAS# 107-06-2: 10 æg/day NSRL

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T F

Risk Phrases:

- R 11 Highly flammable.
- R 22 Harmful if swallowed.
- R 36/37/38 Irritating to eyes, respiratory system and skin.
- R 45 May cause cancer.

Safety Phrases:

- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S 53 Avoid exposure - obtain special instructions before use.

WGK (Water Danger/Protection)

CAS# 107-06-2: 3

Canada - DSL/NDSL

CAS# 107-06-2 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D1B, D2A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 107-06-2 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 12/12/1997

Revision #11 Date: 10/29/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.