SAFETY DATA SHEET

TEDIA®
High Purity Solvents

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All non-emergency numbers should be directed to Customer Service at 800-PURITY1

1,2-DICHLOROETHANE

SDS No. M0060

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: 1, 2-Dichloroethane
Synonyms: Ethylene dichloride; 1, 2-Ethylene dichloride; Dichloroethylene; 1, 2-Bichloroethane, Ethylene chloride, Glycol dichloride; EDC, sym-Dichloroethane
Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

2. HAZARDS IDENTIFICATION

Classification:
Flammable Liquids: GHS Category 2
Acute Toxicity, Inhalation: GHS Category 3
Acute Toxicity, Oral: GHS Category 4
Skin Irritation: GHS Category 2
Eye Irritation: GHS Category 2A
Carcinogenicity GHS Category 1B
Specific Target Organ Toxicity, single exposure: GHS Category 3, Respiratory System
Chronic Aquatic Toxicity: GHS Category 4

Label Elements
Signal Word: DANGER!
Hazard Statements:
H225 – Highly flammable liquid and vapor.
H302 – Harmful if swallowed.
H315 – Causes skin irritation.
H320 – Causes eye irritation.
H332 – Harmful if inhaled.
H336 – May cause drowsiness and dizziness
H350 – May cause cancer.
Precautionary Statements:
P210 – Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P243 – Take precautionary measure against static discharge.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 – IF SWALLOWED: Immediately call POISON CENTER or doctor/physician.
P303+P361+P353 – IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P312 – IF INHALED: Call POISON CENTER or doctor/physician if you feel unwell.
P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 – IF exposed or concerned: Get medical advice/ attention.
P403+P233 – Store in a well-ventilated place. Keep container tightly closed.
P501 – Dispose of contents/ container to an approved waste disposal plant.

Emergency Overview

Causes irritation to eyes, skin, and respiratory tract. May be harmful if swallowed. May cause central nervous system depression. Suspected cancer hazard. May cause liver damage. Highly flammable liquid and vapor. Possible static electrical hazard. Target Organs: Central nervous system, liver, respiratory system, eyes, and skin.

HMIS Rating:
Health – 2* Flammability – 3 Physical Hazard – 0 PPE – User supplied
NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

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3. COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredient	CAS No	Percent	Hazardous
1, 2-Dichloroethane	107-06-2	90-100%	Yes

4. FIRST-AID MEASURES

Inhalation: If inhaled, remove to fresh air. If breathing is labored or with coughing, give 100% supplemental oxygen. If not breathing, begin artificial respiration. Get medical aid. Do not use mouth to mouth resuscitation.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact: Get medical attention. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Eye Contact: Check for and remove contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.
Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flammability: Highly flammable liquid and vapor. (GHS Category 2)
Auto-ignition Temperature: 412.8° C (775.04° F)
Flash Point: 13.3° C (55.94° F).
Flammable Limits: Lower Limit – 6.2%, Upper Limit – 15.9%
Products of Combustion: May decompose into highly toxic and irritating gases (hydrogen chloride, phosgene, carbon monoxide, and carbon dioxide) under fire conditions.
Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Use water spray to keep fire exposed containers cool. 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.
Specific Explosion Hazards: Vapors may form an explosive mixture with air.

Fire Fighting 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.
Special Remarks: None
National Fire Protective Association: Health - 2, Flammability - 3, Reactivity – 0
NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

6. ACCIDENTAL RELEASE MEASURES

Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Provide ventilation to the affected area. Avoid run-off into storm sewers and ditches that lead to waterways. Remove all sources of ignition and use spark-proof tools. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Always use proper personal protective equipment as described in section 8.

7. HANDLING AND STORAGE

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation of vapors and mist. Remove contaminated clothing and wash before reuse. Keep container tightly closed. Ground and bond containers while transferring material. Use spark-proof tools and explosion proof equipment. Keep away from heat, sparks, and flames. Empty containers contain product residue and vapors and may be hazardous. Use only with adequate ventilation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to sparks and open flames.
Storage: Keep away from oxidizing materials. Keep in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store under a nitrogen blanket

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Personal Protection: Wear protective chemical goggles or appropriate eye protection. Use appropriate protective gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.
Exposure Limits:
ACGIH – 10 ppm TWA
NIOSH – 1 ppm TWA; 4 mg/m^3 TWA;
SCP – 1000 ppm IDLH
OSHA Final PELs – 50 ppm (8 hr TWA); 100 ppm ceiling
OSHA Vacated PELs: 1 ppm TWA; 4 mg/m^3 TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: Clear, colorless liquid.
Odor: Chloroform-like odor
Odor Threshold: 207-305 ppm
Molecular Formula: $ClCH_2CH_2Cl$
Molecular Weight: 98.96
Auto-ignition Temperature: 412.8^o C (775.04^o F)
Flash Point: 13.3^o C (55.94^o F).
Flammable Limits: Lower Limit – 6.2%, Upper Limit – 15.9%
pH: Not available.
Boiling Point: 81-85^o C

Freezing/Melting Point: -35° C
Decomposition Temperature: Not available
Specific Gravity: 1.25 (Water=1)
Vapor Density (Air=1): 3.4
Vapor Pressure: 100 mm Hg @ 20° C.
Evaporation Rate (Butyl acetate=1): 6.5
Viscosity: Not available
Solubility: Insoluble
Conductivity: Semiconductive; Conductivity = 4000 pS/m; Dielectric Constant = 10.36; Relaxation Time Constant = 2.2×10^{-2} seconds

10. STABILITY AND REACTIVITY

Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Light, ignition sources, excess, electrical sparks.
Incompatibility with Various Substances: 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, carbon, dioxide.
Hazardous Polymerization: Has not been reported.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact
Acute Exposure Hazards*:*

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

INGESTION HAZARD: 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.

SKIN CONTACT HAZARD: Causes skin irritation. May be absorbed through skin.

EYE CONTACT HAZARD: Causes eye irritation. Vapors may cause eye irritation.

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

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/m^3/6M;
Inhalation, rat: LC50 = 1000 ppm/7H;
Inhalation, rat: LC50 = 5100 mg/m^3/6M;
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, rat: LD50 = 2800 mg/kg;

Carcinogenicity:

ACGIH: Not listed
California: carcinogen, initial date 10/1/87
NTP: suspect carcinogen
IARC: Group 2B carcinogen

Epidemiology: No data available.
Teratogenicity: No data available.

Reproductive Effects: No data available.
Mutagenicity: No data available.
Neurotoxicity: No data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Water flea Daphnia: 218 mg/L; 48hr,
Fish: Bluegill sunfish: 430 mg/L; 96-hr, static
Fish: Fathead minnow: 136 mg/L; 96-hr, static
Environmental Fate: Terrestrial: Smaller releases on land will evaporate fairly rapidly. Larger releases may leach rapidly through sandy soil into ground water. Aquatic: If released to surface water, primary loss may be by evaporation. Half-life for evaporation will depend on wind and mixing conditions and was on the order of hours in the lab. A modeling study using the EXAMS model for a eutrophic lake gave it a half-life of 10-days. Atmospheric: Will degrade by reaction with hydroxyl radicals formed photochemically in the atmosphere. Half-live over one month. Not expected to biodegrade or bioconcentrate.
Special Remarks: None

13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing use, or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements. This material is a "U" listed waste under 40 CFR 261.33 (U077).

14. TRANSPORT INFORMATION

US DOT, IATA, IMO
Proper Shipping Name: Ethylene Chloride
Hazard Class: 3 (6.1)
UN Number: UN1184
Packing Group: II

Canada TDG
Additional Information: Flashpoint 13 C

15. REGULATORY INFORMATION

US Federal Regulations:
TSCA: CAS# 107-06-2 is listed on the TSCA Inventory.
Health and Safety Reporting List: CAS# 107-06-2 effective date: 6/1/1987; Sunset date: 6/1/1997
Chemical Test Rules: CAS# 107-06-2 40 CFR 799.5115.
Section 12b: CAS# 107-06-2 0.1% de minimis concentration.
TSCA Significant New Use Rule: Does not have an SNUR under TSCA.
CERCLA Hazardous Substances: CAS# 107-06-2 – 100 lb final RQ; 45.4 kg final RQ
SARA Section 302: Does not have a TPQ
SARA Codes: CAS# 107-06-2 – immediate, delayed, fire
Section 313: Dichloroethane (CAS# 107-06-2) is subject to SARA Title III Section 313 and 40 CFR 373 reporting requirements.
Clean Air Act: CAS# 107-06-2 is listed as a hazardous air pollutant (HAP). It is not a Class 1 Ozone Depleter. It is not a Class 2 Ozone Depleter.
Clean Water Act: CAS# 107-06-2 is listed as a Hazardous Substance. It is listed as a Priority Pollutant. It is a Toxic Pollutant.

OSHA: Not considered highly hazardous by OSHA.

US State Regulations:

CAS# 107-06-2 is on the following state right-to-know lists: California, New Jersey, Pennsylvania, Minnesota, and Massachusetts

The following statement is made in order to comply with the California State 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 = 10 ug/day. NSRL

Canada:

DSL/NDSL: CAS# 107-06-2 is listed on Canada's DSL list.

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 this MSDS contains all the information required by those regulations.

Ingredient Disclosure List: CAS# 107-06-2 is listed on Canada's Ingredient Disclosure List.

DSCL (EEC):

Hazard Symbols: T, F

Risk Phrases: R11 – Highly flammable; R22 – Harmful if swallowed; R36/37/38 – Irritating to eyes, respiratory system, and skin; R45 – May cause cancer.

Safety Phrases: S45 – Incase of accident, or if you feel unwell, seek medical advice immediately (show the label where possible); S53: Avoid exposure, obtain special instructions before use.

WGK (Water Danger/protection): CAS# 107-06-2: 3

16. OTHER INFORMATION

Originally Prepared: 3/23/2006
Last Revised: 04/24/2019 – Updated pictograph images, hazard and precautionary statements.

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