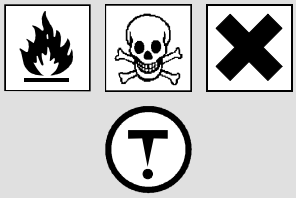
TCI AMERICA

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	**CARCINOGEN. MINIMIZE EXPOSURE.** **MUTAGEN. MINIMIZE EXPOSURE.** **Flammable material; avoid heat and sources of ignition.** **Toxic compound, do not ingest or inhale. Avoid all contact with this material.** **Irritating to skin, eyes, and the respiratory system.**	

Section I. Chemical Product and Company Identification

Chemical Name **1,2-Dichloroethane**

Catalog Number	D0310
Synonym	Ethylene Dichloride
Chemical Formula	$ClCH_2CH_2Cl$
CAS Number	107-06-2

Supplier
TCI America
9211 N. Harborgate St.
Portland OR
1-800-423-8616

In case of Emergency Call
Chemtrec®
(800) 424-9300 (U.S.)
(703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
1,2-Dichloroethane	107-06-2	Min. 99.5 (GC)	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen. This compound is classified as a mutagen. There is no acceptable exposure limit for a mutagen.	Rat LD_{50} (oral) 500 mg/kg Rabbit LD_{50} (dermal) 2800 mg/kg Rat LC_{50} (inhalation) 1000 ppm/7H Rat LD_{50} (intraperitoneal) 807mg/kg Mouse LD_{50} (oral) 413 mg/kg

Section III. Hazards Identification

Acute Health Effects

Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death.
Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Chronic Health Effects

CARCINOGENIC EFFECTS : Carcinogenic by RTECS criteria.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Tumorigenic Effects.
Rat TDLo Oral 5286 mg/kg/69 weeks intermittent
TOXIC Effects:
Tumorigenic - Carcinogenic by RTECS criteria
Gastrointestinal - Tumors
Skin and Appendages - Tumors
Mouse TDLo Oral 3536 mg/kg/78 weeks intermittent
TOXIC Effects:
Tumorigenic - Carcinogenic by RTECS criteria
Lung, Thorax, or Respiration - Tumors
Skin and Appendates - Tumors
Mouse TD Oral 76 gm/kg/78 weeks intermittent
TOXIC Effects:
Tumorigenic - Carcinogenic by RTECS criteria
Skin and appendages - Tumors
Tumorigenic Effects - Uterine tumors
DEVELOPMENTAL TOXICITY: Reproductive Effects.
Rat TCLo Inhalation 57 mg/m3, female 24 weeks prior to mating.
TOXIC Effects:
Effects on Embryo or Fetus - Fetotoxicity
Effects on Embryo or Fetus - Fetal death.
Rat TCLo Inhalation 208 mg/m3/6 hours, female 2 weeks prior to mating
TOXIC Effects:
Effects on Fertility - Pre-implantation mortality
Rat TCLo Inhalation 300 ppm/7 hours, female 6-15 days of pregnancy.
TOXIC Effects:
Effects on Fertility - Post-implantation mortality

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Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data

Flammability	Flammable.	Auto-Ignition	440°C (824°F)
Flash Points	17°C (62.6°F).	Flammable Limits	LOWER: 6.2% UPPER: 16%

Combustion Products	These products include toxic carbon oxides (CO,CO_2), halogenated compounds WARNING: Highly toxic HCl gas is produced during combustion.
Fire Hazards	Not available.
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	Flammable liquid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Consult with local fire authorities before attempting large scale fire-fighting operations.

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Carcinogenic material. Mutagenic material. Flammable material. Toxic material. Irritating material. Keep away from heat. Mechanical exhaust required. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information	CARCINOGEN. MUTAGEN. FLAMMABLE. TOXIC. IRRITANT. Keep locked up. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. 
Exposure Limits	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen. This compound is classified as a mutagen. There is no acceptable exposure limit for a mutagen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Clear, colorless.)	Solubility	Very slightly soluble in water. Miscible with ether, chloroform, alcohol.
Specific Gravity	1.26 (water=1)		
Molecular Weight	98.96	Partition Coefficient	Not available.
Boiling Point	82°C (179.6°F)	Vapor Pressure	8.7 kPa (@ 20°C)
Melting Point	Not available.	Vapor Density	3.42 (Air = 1)
Refractive Index	1.444	Volatility	Not available.
Critical Temperature	Not available.	Odor	Characteristic.
Viscosity	Not available.	Taste	Not available.

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Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents.

Section XI. Toxicological Information

RTECS Number	KI0525000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD_{50} (oral) 500 mg/kg Rabbit LD_{50} (dermal) 2800 mg/kg Rat LC_{50} (inhalation) 1000 ppm/7H Rat LD_{50} (intraperitoneal) 807mg/kg Mouse LD_{50} (oral) 413 mg/kg
Chronic Toxic Effects	**CARCINOGENIC EFFECTS** : Carcinogenic by RTECS criteria. **MUTAGENIC EFFECTS** : Not available. **TERATOGENIC EFFECTS** : Tumorigenic Effects. Rat TDLo Oral 5286 mg/kg/69 weeks intermittent TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria Gastrointestinal - Tumors Skin and Appendages - Tumors Mouse TDLo Oral 3536 mg/kg/78 weeks intermittent TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria Lung, Thorax, or Respiration - Tumors Skin and Appendates - Tumors Mouse TD Oral 76 gm/kg/78 weeks intermittent TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria Skin and appendages - Tumors Tumorigenic Effects - Uterine tumors **DEVELOPMENTAL TOXICITY**: Reproductive Effects. Rat TCLo Inhalation 57 mg/m3, female 24 weeks prior to mating. TOXIC Effects: Effects on Embryo or Fetus - Fetotoxicity Effects on Embryo or Fetus - Fetal death. Rat TCLo Inhalation 208 mg/m3/6 hours, female 2 weeks prior to mating TOXIC Effects: Effects on Fertility - Pre-implantation mortality Rat TCLo Inhalation 300 ppm/7 hours, female 6-15 days of pregnancy. TOXIC Effects: Effects on Fertility - Post-implantation mortality
Acute Toxic Effects	Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	1,2-Dichloroethane's production and use as a chemical intermediate, in soaps, lead scavenger, solvent, and former use as a fumigant may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 78.9 mm Hg at 25 deg C indicates 1,2-dichloroethane will exist solely as a vapor in the ambient atmosphere. Vapor-phase 1,2-dichloroethane will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 63 days. Indirect evidence for photooxidation of 1,2-dichloroethane comes from the observation that monitoring levels are highest during the night and early morning. If released to soil, 1,2-dichloroethane is expected to have very high mobility based upon a Koc of 33. Volatilization from moist soil surfaces is expected to be an important fate process based upon a Henry's Law constant of 1.18X10-3 atm-cu m/mole. 1,2-Dichloroethane may volatilize from dry soil surfaces based upon its vapor pressure. Biodegradation in soil or water is not expected to be an important environmental fate process based upon a variety of biodegradation test data. If released into water, 1,2-dichloroethane is not expected to adsorb to suspended solids and sediment based upon the Koc. Volatilization from water surfaces is expected to be an important fate process based upon this compound's Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 4 hrs and 4 days, respectively. A BCF of 2 suggests bioconcentration in aquatic organisms is low. Hydrolysis is not expected to be an important environmental fate process since this compound lacks functional groups that hydrolyze under environmental conditions. Occupational exposure to 1,2-dichloroethane may occur through inhalation and dermal contact with this compound at workplaces where 1,2-dichloroethane is produced or used. Monitoring data indicate that the general population may be exposed to 1,2-dichloroethane via inhalation of ambient air, ingestion of food and drinking water, and dermal contact with this compound and consumer products containing 1,2-dichloroethane.

Continued on Next Page

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

Section XIV. Transport Information

DOT Classification	DOT CLASS 3: Flammable liquid DOT CLASS 6.1: Toxic material.
PIN Number	UN1184
Proper Shipping Name	Ethylene dichloride
Packing Group (PG)	II
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	On DSL
EINECS Number (EEC)	203-458-1
EEC Risk Statements	R10- Flammable. R18- In use, may form flammable/explosive vapor-air mixture. R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R46- May cause heritable genetic damage. R47- May cause birth defects.
Japanese Regulatory Data	ENCS No. 2-54

Section XVI. Other Information

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Notice to Reader