



SAFETY DATA SHEET

EMERGENCY TELEPHONE NUMBERS: (800) 424-9300 CHEMTREC

PRODUCT NAME: trans - 1, 2 Dichloroethylene

SECTION I PRODUCT IDENTIFICATION

CAS REGISTRY #: 156-60-5
CHEMICAL FAMILY: Chlorinated Hydrocarbon
CHEMICAL NAME: trans -1, 2 Dichloroethylene
CHEMICAL FORMULA: C2H2Cl2

SYNONYMS: trans-acetylene dichloride; trans-dichloroethylene; trans-1, 2-dichloroethene; 1, 2-dichloroethylene

SECTION II HAZARDS IDENTIFICATION

GHS Classification: Flammable Liquids, 2, H225
Acute Toxicity - Inhalation, 4, H332
Aspiration Hazard, 1, H304
Aquatic Hazard (Long Term), 3, H412

GHS Label Elements
Symbol(s):



Signal Words:

Danger

GHS Hazard Statements:

Physical Hazards
H225: Highly Flammable Liquid and Vapor.

Health Hazards
H304: May be fatal if swallowed and enters airways.
H332: Harmful if inhaled.

Environmental Hazards
H412: Harmful to aquatic life with long lasting effects.

GHS Precautionary Statements

- Prevention: P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233: Keep container tightly closed
P202: Do not handle until all safety precautions have been read and understood.
P240: Ground/bond container and receiving equipment
P241: Use explosion-proof electrical/ventilating/lighting/.../equipment
P242: Use only non-sparking tools
P243: Take precautionary measures against static discharge.
P261: Avoid breathing vapors
P271: Use only outdoors or in a well-ventilated area
P273: Avoid release to the environment
P280: Wear protective gloves/eye protection/face protection

- Response: P301 + P310: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P303 +P361+ P353: IF ON SKIN (or hair): Take off immediately all



contaminated clothing. Rinse skin with water/ shower.  
P304 + P340: If INHALED Remove person to fresh air keep comfortable for breathing.  
P312: Call a POISON CENTER/doctor/...if you feel unwell.  
P331: Do NOT induce vomiting.  
P370+378: In case of fire: Use Dry Chemical Extinguisher (B-C), Water Spray, Carbon Dioxide or appropriate foam to extinguish.  
Storage: P403+P235: Store in a well-ventilated place. Keep Cool.  
P405: Store locked up  
Disposal: P501: Dispose of contents/containers in accordance with all local/regional/national/international regulations.

## SECTION III COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Identifiers	Percent
trans - 1, 2 Dichloroethylene	EC: 205-860-2 CAS: 156-60-5	>99

## SECTION IV FIRST AID MEASURES

**Inhalation:** Remove from area to fresh air. If symptomatic, contact a poison control center, emergency room or physician for treatment information.

**Eye/Skin Contact:** EYE: Remove contact lens and pour a gentle stream of warm water through the affected eye for at least 15 minutes. If irritation persists, contact a poison control center, emergency room, or physician as further treatment may be necessary. SKIN: Run a gentle stream of water over the affected area for 15 minutes. A mild soap may be used if available. If any symptoms persist, contact a poison control center, emergency room, or physician as further treatment may be necessary.

**Ingestion:** Gently wipe or rinse the inside of the mouth with water. Sips of water may be given if person is fully conscious. Never give anything by mouth to an unconscious or convulsing person. Do not induce vomiting. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.

## SECTION V FIREFIGHTING MEASURES

### Extinguishing Media:

Dry Chemical Extinguisher (B-C), Water Spray, Carbon Dioxide or appropriate foam.

### Fire And Explosion Hazards:

Severe fire hazard. Vapor/air mixtures are explosive above flash point. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

### Special Fire Fighting Procedures:

Emits toxic fumes under fire conditions. Fire-fighters must wear NIOSH approved pressure demand, self-contained breathing apparatus and full protective clothing when fighting chemical fires. Vapor concentration in a confined or poorly ventilated area can be ignited upon contact with a high energy spark, flame, or high intensity source of heat. Vapors may travel a considerable distance to source of ignition and flash back. Vapor/air mixtures are explosive.

### NPCA - HMIS Ratings

<b>HEALTH</b>	<b>2</b>
<b>FLAMMABILITY</b>	<b>3</b>
<b>REACTIVITY</b>	<b>2</b>



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## SECTION VI ACCIDENTAL RELEASE MEASURES

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### **Steps To Be Taken If Material Is Released Or Spilled**

Immediately evacuate the area. Provide maximum ventilation. Unprotected personnel should move upwind of spill. Only personnel equipped with proper respiratory and eye/skin protection should be permitted in the area. Dike area to contain spill. Take precautions as necessary to prevent contamination of ground and surface waters. Recover spilled material on adsorbents, such as sawdust or vermiculite, and sweep into closed containers for disposal. After all visible traces, including ignitable vapors, have been removed, thoroughly wet vacuum the area. Do not flush to sewer. If area of spill is porous, remove as much earth and gravel, etc. as necessary and place in closed containers for disposal. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center.

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## SECTION VII HANDLING AND STORAGE

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Keep container closed when not in use. Store only in closed, properly labeled containers. Avoid contamination of water supplies. Handling, storage and use procedures must be carefully monitored to avoid spills or leaks. Any spill or leak has the potential to cause underground water contamination which may, if sufficiently severe, render a drinking water source unfit for human consumption. Contamination that does occur cannot be easily corrected. Do not use cutting or welding torches on drums that contained this product unless properly purged and cleaned. Vapors are heavier than air and will collect in low areas. This material can react with air to form explosive peroxide. Do not use in poorly ventilated or confined spaces without proper respiratory protection.

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## SECTION VIII EXPOSURE CONTROLS / PERSONAL PROTECTION

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### **Exposure Limits:**

**OSHA:** 200 ppm (790 mg/m<sup>3</sup>) OSHA TWA  
**ACGIH:** 200 ppm TWA. (1, 2-trans-Dichloroethylene)

### **Respiratory Protection:**

Use a half or full face piece organic vapor chemical cartridge or canister respirator when concentrations exceed permissible limits. Use self-contained breathing apparatus (SCBA) or full face piece airline respirator with auxiliary SCBA operated in the pressure demand mode for emergencies and for all work performed in storage vessels, poorly ventilated rooms, and other confined areas. Respirators must be approved by NIOSH. The respiratory use limitations made by NIOSH or the manufacturer must be observed. Respiratory protection programs must be in accordance with 29 CFR 1910.134.

### **Ventilation:**

Use local exhaust or general room/dilution ventilation sufficient to maintain employee exposure below permissible exposure limits.

**Eye and Face Protection:** Splash proof goggles and face shield.

**Protective Gloves:** Wear appropriate chemical resistant gloves.

### **Other Protective Equipment:**

Boots, aprons, or chemical suits should be used when necessary to prevent skin contact. Personal protective clothing and use of equipment must be in accordance with 29 CFR 1910.132 (general requirements), .133 (eye and face protection), and .138 (hand protection).



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## SECTION IX PHYSICAL AND CHEMICAL PROPERTIES

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<b>Flash Point (Method):</b>	36 °F (CLOSED CUP)
<b>Lower Explosion Limit:</b>	6.7 % (VOL.) GAS IN AIR
<b>Upper Explosion Limit:</b>	18 % (VOL.) GAS IN AIR
<b>Physical State:</b>	liquid
<b>Color:</b>	colorless
<b>Odor:</b>	pleasant odor
<b>Molecular Weight:</b>	96.94
<b>Molecular Formula:</b>	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>
<b>Boiling Point:</b>	118 F (48 C)
<b>Freezing Point:</b>	-58 F (-50 C)
<b>Vapor Pressure:</b>	400 mmHg @ 87 F
<b>Vapor Density (Air=1):</b>	3.34
<b>Specific Gravity (Water=1):</b>	1.2565
<b>Water Solubility@ 70 F:</b>	slightly soluble
<b>Evaporation Rate:</b>	NA

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## SECTION X STABILITY AND REACTIVITY

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**Stability:** Stable

**Hazardous Polymerization:** Will Not Occur

**Incompatibility (Materials To Avoid):** Steam, oxidizers, caustic soda, caustic potash. Shock sensitive compounds may be formed.

**Hazardous Decomposition Products:** Hydrogen chloride gas. Oxides of carbon.

**Conditions to Avoid:** High heat, spark, and open flames.

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## SECTION XI TOXICOLOGICAL INFORMATION

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<b>Acute Inhalation Lc50:</b>	(rat) 24,100 ppm (4 hours). Slight to very low toxicity.
<b>Acute Dermal Ld50:</b>	(rabbit) >5000 mg/kg. Slight to very low toxicity.
<b>Skin Irritation:</b>	Mildly to moderately irritating.
<b>Eye Irritation:</b>	Moderately to severely irritating.
<b>Acute Oral Ld50:</b>	Slight to very low toxicity.
<b>Chronic Effects/Carcinogenicity:</b>	NOT listed as a carcinogen by NTP, IARC, or OSHA.
<b>Medical Conditions Aggravated:</b>	None known.

### Effects of overexposure:

#### ACUTE

**Inhalation:** This product is a central nervous system depressant. Inhalation can cause irritation of the respiratory tract, dizziness, nausea, headache, loss of coordination and equilibrium, unconsciousness and even death in confined or poorly ventilated areas. Cardiac sensitization has occurred in dogs dosed at concentrations greater than 25%.

**Eye/Skin:** Eye contact can result in discomfort, pain, irritation and discharge. Washing of the eyes with water may result in corneal injury. Prolonged contact such as occurs when material is trapped on the skin (e.g. under a glove) may result in severe irritation. Skin absorption is not expected to be of toxicological significance under normal industrial use.

**Ingestion:** Swallowing may irritate the mouth and GI tract as well as cause the effects listed for inhalation exposure. Vomiting may cause aspiration into the lungs that may lead to potentially fatal chemical pneumonia and pulmonary edema.



## SUBCHRONIC

A 90 day inhalation study exposing rats to 1, 2-dichloroethylene reported no adverse effects on body weight, clinical observations, food consumption, clinical or anatomical pathology parameters, or liver cell proliferation. The no-observed-effect level (NOEL) for this study was 4000 ppm in rats that suggests a low order of toxicity by the inhalation. In an NTP study, rats and mice were dose fed for a period of 13 weeks. No mortality, clinical observations of toxicity, or food consumption effects was noted in mice or rats. Minor reductions in body weights were observed in mice. Liver organ weights changes were reported in rats. Rats dosed at the highest level (50,000 ppm) showed a few abnormal clinical pathology findings. Histopathology reports revealed no microscopic evidence of treatment-related target organ effects. In separate 90-day drinking water studies, 1, 2-dichloroethylene exposed rats and mice showed no does related effects in hematological, serological, and gross pathological, or urinary parameters.

**Mutagenesis:** Trans-1,2-dichloroethylene was not mutagenic to E-coli or S. Typhimurium when tested with microsomal activation. In another study, trans-1, 2-dichloroethylene did not product mutations in Saccharomyces cerevisiae with or without microsomal activation. No genetic effects were reported in a vivo host mediated mutagenic assay.

**Reproductive/Developmental:** In a teratology study conducted in rats by the inhalation route of exposure, significant fetal toxicity (i.e., decreased body weight, increased skeletal variations) was observed only at maternally toxic concentrations (12,000 ppm). Based on the results of this study, trans-1, 2-dichloroethylene would not be considered to be a developmental toxicant.

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## SECTION XII ECOLOGICAL INFORMATION

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**INVERTEBRATE TOXICITY:** <110000 ug/L 48 hour(s) (Mortality) Water flea (Daphnia magna)

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## SECTION XIII DISPOSAL CONSIDERATIONS

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Contaminated sand, sawdust, vermiculite, soil or porous surface must be disposed of in a permitted hazardous waste management facility. Recovered liquids may be reprocessed or incinerated or must be treated in a permitted hazardous waste management facility. Care must be taken when using or disposing of chemical materials and/or their containers to prevent environmental contamination. It is your duty to dispose of the chemical materials and/or their containers in accordance with the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, as well as any other relevant Federal, State, or local laws/regulations regarding disposal.

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## SECTION XIV TRANSPORT INFORMATION

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**Proper Shipping Name:** 1, 2-Dichloroethylene  
**Hazard Class:** 3 (Flammable Liquid)  
**UN Number:** UN1150  
**Packing Group:** II  
**USA-RQ, Hazardous Substance and Quantity:** 1000 lbs. /454 kg (1, 2-trans-Dichloroethylene)

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## SECTION XV REGULATORY INFORMATION

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**USA TSCA:** All components of this product are listed on the TSCA Inventory.

**Europe EINECS:** All components in this product are listed on EINECS or meet the polymer definition. (205-860-2)

**Canada Domestic Substances List (DSL):** This product and/or all of its components are listed on the Canadian DSL.

**Australia AICS:** All components of this product are listed on AICS.

**Korea ECL:** All components in this product are listed on the Korean Existing Chemicals Inventory (KECI).

**Japan Miti (ENCS):** All components of this product are listed on MITI.

**Philippines PICCS:** One or more components in this product are not listed on the Phillipines Inventory of Chemical and Chemical Substances (PICCS). This product can only be used in R&D applications.

**Sara Title III:**

trans 1, 2 Dichloroethylene



**SARA (311, 312) Hazard Class:** Acute Health Hazard.

**SARA (313) Chemicals:** Not listed.

**SARA Extremely Hazardous Substance:** Not listed.

**CERCLA Hazardous Substance:** Listed in Table 302.4 of 40 CFR Part 302 as a hazardous substance with a reportable quantity of 1000 pounds. Releases to air, land or water which exceed the RQ must be reported to the National Response Center, 800-424-8802.

**RCRA:** Waste trans and contaminated soils/materials from spill cleanup are U079 hazardous waste as per 40 CFR 261.33 and must be disposed of accordingly under RCRA.

**Canada Regulations (WHMIS):** Class B2 - Flammable Liquids. Class D2B - Toxic Materials.

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## SECTION XVI OTHER INFORMATION

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for the safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.