

Date: April 18, 2025 Rev. 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Trans-1,2 Dichloroethylene
Cas Registry: 156-60-5
Chemical Family: Chlorinated Hydrocarbon
Chemical Formula: trans-1,2 Dichloroethylene
Synonyms: trans-acetylene dichloride; trans-dichloroethylene; trans-1, 2-dichloroethene; 1, 2-dichloroethylene
Supplier Information: Unistar Chemical Inc.
425 Huehl Road, Bldg 1,
Northbrook, IL, 60062
1-847-724-8869
E-mail: info@unistarchemical.com
Emergency Contact: (800) 424-9300 CHEMTREC

2. HAZARD IDENTIFICATION



Signal word: DANGER

Hazard classification:

Flammable liquids 2, H225
Acute toxicity Inhalation, 4, H332
Aspiration Hazard 1, H304
Aquatic Hazard (long term) 3, H412

HAZARD

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.

PRECAUTIONARY STATEMENTS

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 Ground/
P240	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.
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3. COMPOSITION/INFORMATION ON INGREDIENTS

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

4. FIRST AID MEASURES

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

5. FIREFIGHTING MEASURES

Suitable 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

HEALTH	2
FLAMMABILITY	3
REACTIVITY	2

6. ACCIDENTAL RELEASE MEASURES

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.

7. HANDLING AND STORAGE

Precautions for safe handling:

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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

OSHA: 200 ppm (790 mg/m³) OSHA TWA
ACGIH: 200 ppm TWA. (1, 2-trans-Dichloroethylene)

Eye/face protection:	Splash proof goggles and face shield.
Hand protection:	Wear appropriate chemical resistant gloves.
Other protection:	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).
Ventilation:	Use local exhaust or general room/dilution ventilation sufficient to maintain employee exposure below permissible exposure limits.
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.

9. PHYSICAL AND CHEMICAL PROPERTIES (NOT A SPECIFICATION)

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

10. STABILITY AND REACTIVITY

Stability:	Stable.
Hazardous Polymerization:	Will not occur.
Conditions to avoid:	High heat, spark, and open flames .
Incompatible materials:	Steam, oxidizers, caustic soda, caustic potash. Shock sensitive compounds may be formed.
Hazardous decomposition Products:	Hydrogen chloride gas. Oxides of carbon.

11. TOXICOLOGICAL INFORMATION

Acute Inhalation Lc50:	(rat) 24,100 ppm (4 hours). Slight to very low toxicity.
Acute Dermal Ld50:	rabbit) >5000 mg/kg. Slight to very low toxicity.
Skin Irritation:	Mildly to moderately irritating.
Eye Irritation:	Moderately to severely irritating.
Acute Oral Ld50:	Slight to very low toxicity.
Chronic Effects/Carcinogenicity:	NOT listed as a carcinogen by NTP, IARC, or OSHA.
Medical Conditions Aggravated:	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.

Effects of overexposure:

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.

12. ECOLOGICAL INFORMATION

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

13. DISPOSAL CONSIDERATIONS

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.

14. TRANSPORT INFORMATION

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)

15. REGULATORY INFORMATION

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:

SARA 311 & 312 Acute Health Hazard.
SARA 313 Not Listed.

SARA Extremely
Hazardous Not Listed
Substance:

CERCLA Hazardous Releases to air, land or water which exceed the RQ must be
Substance: reported to the National Response Center, 800-424-8802.

RCRA: Releases to air, land or water which exceed the RQ must be
reported to the National Response Center, 800-424-8802.

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

16. OTHER INFORMATION

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.

CAS:Chemical Abstracts Service

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