

1. PRODUCT NAME: Trichloroethylene
2. CHEMICAL NAME: 1,1,2-Trichloroethylene
3. SYNONYMS:
4. CAS NUMBER: 79-01-6
5. COMPOSITION: 1,1,2-Trichloroethylene (79-01-6) - 100%

IN CASE OF  
TRANSPORT EMERGENCY  
CONTACT CHEMTREC  
USA: 1-800-424-9300  
INTERNATIONAL: 1-703-527-3887

6. PROPERTIES: ODOR & APPEARANCE: clear, colorless, liquid with mild, pleasant, chloroform-like odor  
ODOR THRESHOLD: approx 80 ppm – above the TWAEV. WARNING: Pleasant odor & high odor threshold provide inadequate warning of hazard.  
VAPOUR PRESSURE: 60mmHg/8kPa (20 c)  
EVAPORATION RATE (butyl Acetate=1): 4.9 – (3.0 also reported)  
VAPOR DENSITY (air=1): 4.5  
BOILING RANGE: 87 c  
FREEZING POINT: -73 c  
SPECIFIC GRAVITY: 1.46 (20/20 c)  
WATER SOLUBILITY: 1.1 grams per litre (20 c)  
IN OTHER SOLVENTS: soluble in most organic solvents; good solubility in fats and oils  
VISCOSITY: 0.57 centipoise (20 c)  
FLASH POINT: will not flash – above 100 c, vapor ignites in open flame  
AUTOIGNITION TEMPERATURE: 420 c  
FLAMMABLE LIMITS: 8% - 52% (in continuous contact with open flame at 100 c)  
COMBUSTION PRODUCTS: carbon monoxide, nitrogen oxides, plus highly toxic hydrogen chloride, chlorine, chlorine phosgene, and smoke, part oxidized hydrocarbon fragments  
FIREFIGHTING PRECAUTIONS: as for materials sustaining fire; firefighters must wear chemically resistant suit and positive pressure breathing apparatus (SCBA)  
STATIC DISCHARGE: will accumulate a static charge – but discharge may ignite other flammables  
MECHANICAL IMPACT: not sensitive  
CHEMICAL STABILITY: stable; will not polymerise  
REACTIVE WITH: alkali metals (eg: Na, K, Ca) and certainly finely divided (powdered) metals (eg: Al, Ti, Be); strong alkalies; oxidizing agents or agents; AlCl<sub>3</sub> promotes polymerization; KNO<sub>3</sub> may react violently; uninhibited product may corrode Al, Fe, Zn in presence of moisture  
DECOMPOSITION PRODUCTS: decomposes gradually in air, more rapidly in presence of ultraviolet light (sunlight), and in the presence of moisture – into dichloroacetic acid and hydrochloric acid. Generally inhibitors are added to this product to retard decomposition – their level should be checked regularly.

7. HAZARDS: HMIS (USA): Health - 2, Fire - 0, Reactivity - 0

8. FIRE FIGHTING INFORMATION: FIREFIGHTING PRECAUTIONS: as for materials sustaining fire; firefighters must wear chemically resistant suit and positive pressure breathing apparatus (SCBA)

9. PERSONAL PROTECTION MEASURES: HANDS: “Viton”, “Barricade”, “Trellechem HPS” or polyvinyl alcohol gloves (consult glove supplier)  
EYES: safety glasses with side shields or chemical goggles  
VENTILATION: adequate ventilation is required to ensure that workers do not inhale this vapor; respirators with organic vapor cartridges should be kept in sealed bags or containers for “escape” use should ventilation fail or vapor degreasing equipment start leaking  
CLOTHING: impermeable (hands, above) apron, boots, long sleeves, if splashing is anticipated



Carolina International Sales Co., Inc

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10. FIRST AID PROCEDURES: SKIN: Wash with soap and plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered.  
EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.  
INHALATION: Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.  
INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.  
NOTE: Inadvertent inhalation of vomited material may seriously damage the lungs. The risk and danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity product. The stomach should only be emptied under medical supervision, after the installation of an airway to protect the lungs.

11. EXPOSURE LIMITS: TWAEV ppm: 50  
LD50 ORAL: 2400  
SKIN (mg/kg): 20.000  
LC50 mg/m3 INHALATION: 8450

12. TOXICOLOGICAL INFORMATION: EFFECTS ACUTE EXPOSURE  
SKIN CONTACT: severe irritant – reddening and blister formation  
SKIN ABSORPTION: yes; slowly; toxic effects unlikely by this route  
EYE CONTACT: mildly irritating; may damage eyes; vapor irritating above 200 ppm  
INHALATION: irritating, headache, dizziness, drowsiness, eventually eyesight problems, irregular heart-beat, unconsciousness and possible death  
INGESTION: burning sensation in mouth & throat; abdominal pain, headache, dizziness, drowsiness, muscle weakness  
EFFECTS OF CHRONIC EXPOSURE  
GENERAL: prolonged exposure likely to cause skin cracking and dermatitis; repeated absorption may damage liver and kidneys; chronic headache, depression, altered mood, poor concentration, insomnia have been reported; facial nerve damage (causing numbness), and blurred vision have been seen following long term exposure to 40-170ppm  
SENSITISING: not a sensitizer  
CARCINOGENIC: probably to be a animal carcinogen; may well be a human carcinogen although the U.S ACGIH has not listed it as such  
REPRODUCTIVE EFFECT: limited evidence of birth defects from trichloroethylene in the drinking water in both experimental animals and humans.  
SYNERGISTIC WITH: alcohol consumed after trichloroethylene exposure causes skin reddening on face & arms (degreasers flush)  
ESTIMATED LD50: 2400mg/kg (oral,mouse), 4920mg/kg (oral, rat); 20,000mg/kg (skin, rabbit); 22,500mg/kg (skin, rabbit), 18,000mg/kg (skin, rat)  
ESTIMATED LC50: 8450 ppm (inhalation, mouse)

13. ECOLOGICAL INFORMATION: This product will bioaccumulate in living tissue..

14. DISPOSAL CONSIDERATIONS: DO NOT FLUSH TO SEWER; may be incinerated in facility with flue gas monitoring and scrubbing



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15. **CARCINOGENIC PROPERTIES & NOTIFICATIONS:** Probably an animal carcinogen; may well be a human carcinogen although the U.S ACGIH has not listed it as such.
16. **TRANSPORT INFORMATION:** USA 49 CFR  
Product identification number: UN - 1710  
Shipping name: trichloroethylene  
Classification: Class 6.1; Packing Group III  
Label: corrosive  
WHMIS Class: D 1B; D 2A
17. **HANDLING & STORAGE:** Store and use in a cool dry environment, away from sources of ignition, heat and oxidizing agents. Use with good mechanical ventilation or in a closed system (eg: vapor degreaser). Workers may acclimatize to the odor of the product, even concentrations of 300ppm. Heating (even in a cigarette) may decompose this product to highly toxic phosgene gas. Lightheadedness and poor co-ordination have occurred in employees breathing high vapor concentrations – possible hazard when operating machinery. A large number of neurological symptoms have been reported in people after exposure to relatively low concentrations for decades. There is no doubt that inhalation of trichloroethylene is toxic and all exposure should be avoided. Do not cut, drill, weld or grind on or near this container. Avoid contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.
18. **ACCIDENTAL LEAK PRECAUTION:** dyke to control spillage and prevent environmental contamination.  
**RELEASE HANDLING SPILL:** ventilate contaminated area; recover free liquid with suitable pumps; absorb residue  
**MEASURES:** on an inert sorbent, sweep, shovel, & store in closed containers for recycling and disposal.