

1,2,3-TRICHLOROPROPANE

TCN

CAUTIONARY RESPONSE INFORMATION

Common Synonyms		Liquid	Colorless	Strong acid odor
Allyl trichloride Glycerol trichlorohydrin Propane, 1,2,3-trichloro Trichlorohydrin		Liquid sinks in water.		
<p>Keep people away. Avoid contact with liquid and vapor. Wear goggles, self-contained breathing apparatus, rubber gloves, and overclothing made of rubber, polyethylene or polyvinyl chloride. Shut off ignition sources. Call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	Combustible. Highly toxic and irritating fumes are generated when ignited. Wear goggles, self-contained breathing apparatus, rubber gloves, and overclothing made of rubber, polyethylene or polyvinyl chloride. Extinguish fire with water, foam, carbon dioxide or dry chemical.			
Exposure	CALL FOR MEDICAL AID. VAPOR Irritating to eyes, nose, throat, and skin. If inhaled, will cause anesthesia, dizziness, and nausea. Move to fresh air. IF BREATHING has stopped, give artificial respiration. IF BREATHING is difficult, give oxygen. LIQUID Harmful if swallowed. Irritating to skin and eyes. Flush affected areas with plenty of water. Remove from skin with soap and water. Remove contaminated clothing. IF IN EYES, hold eyelids open and flush with water for 15 minutes. If swallowed and victim is CONSCIOUS, give two glasses of water and have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.			
Water Pollution	Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.			

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Pump; Dredge
Do not burn

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 36; Halogenated hydrocarbon
2.2 Formula: CH₂ClCHCl₂
2.3 IMO/UN Designation: Not listed
2.4 DOT ID No.: Not listed
2.5 CAS Registry No.: Currently not available
2.6 NAERG Guide No.: Not listed
2.7 Standard Industrial Trade Classification: 51134

3. HEALTH HAZARDS

- 3.1 Personal Protective Equipment:** Rubber gloves, safety goggles, impermeable clothing, and other equipment to prevent contact with the body. Organic canister or air pack as required.
- 3.2 Symptoms Following Exposure:** Inhalation of vapor causes anesthesia, dizziness, and nausea. Vapor is highly irritating by inhalation routes and moderately irritating by dermal routes. Exposure of eyes to vapor may result in slight, transient injury to the cornea.
- 3.3 Treatment of Exposure:** Get medical assistance. INHALATION: Remove victim to fresh air. If breathing has stopped give artificial respiration. INGESTION: If conscious, give two glasses of water and induce vomiting. No specific antidote. EYES: Hold eyelids open, flush with water for 15 minutes. SKIN: Flush immediately with water. Remove liquid from skin with soap and water. Remove contaminated clothing.
- 3.4 TLV-TWA:** 10 ppm
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 3; LD₅₀ = 320-505 mg/kg (rat)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Toxicity is cumulative. Causes damage to heart, liver, and kidneys in humans. May cause death or permanent injury after very short exposure to small quantities.
3.10 Vapor (Gas) Irritant Characteristics: Severe irritant to eyes and skin. High irritant via oral and inhalation routes.
3.11 Liquid or Solid Characteristics: Rated 4 on scale of 1-10 when tested externally on eyes of rabbits. Dermal LD₅₀ (rabbit) = 1.77 g/kg.
3.12 Odor Threshold: Currently not available
3.13 IDLH Value: 100 ppm.
3.14 OSHA PEL-TWA: 50 ppm.
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

- 4.1 Flash Point:** 174°F O.C. 164°F C.C.
4.2 Flammable Limits in Air: 3.2% - 12.6%
4.3 Fire Extinguishing Agents: Water; foam; carbon dioxide; dry chemical
4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent.
4.5 Special Hazards of Combustion Products: Highly toxic chloride fumes including hydrochloric acid.
4.6 Behavior in Fire: It burns and produces highly toxic chloride fumes.
4.7 Auto Ignition Temperature: 579°F
4.8 Electrical Hazards: Currently not available
4.9 Burning Rate: Currently not available
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichiometric Air to Fuel Ratio: 16.7 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 7.0 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

- 5.1 Reactivity with Water:** Not reactive.
5.2 Reactivity with Common Materials: Can react vigorously with oxidizing materials. Avoid bases. Decomposition reaction may be initiated by aluminum, magnesium and their alloys.
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Will not occur
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

- 6.1 Aquatic Toxicity:** Currently not available
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): Currently not available
6.4 Food Chain Concentration Potential: Currently not available
6.5 GESAMP Hazard Profile:
 Bioaccumulation: 0
 Damage to living resources: (2)
 Human Oral hazard: 2
 Human Contact hazard: II
 Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 Grades of Purity:** 90% min. to 99+%
7.2 Storage Temperature: Store out of direct sunlight.
7.3 Inert Atmosphere: Currently not available
7.4 Venting: Currently not available
7.5 IMO Pollution Category: C
7.6 Ship Type: 2
7.7 Barge Hull Type: 2

8. HAZARD CLASSIFICATIONS

- 8.1 49 CFR Category:** Not listed
8.2 49 CFR Class: Not pertinent
8.3 49 CFR Package Group: Not listed.
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:
- | Category | Classification |
|---------------------------|----------------|
| Health Hazard (Blue)..... | 3 |
| Flammability (Red)..... | 2 |
| Instability (Yellow)..... | 0 |
- 8.6 EPA Reportable Quantity:** Not listed.
8.7 EPA Pollution Category: Not listed.
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 Physical State at 15° C and 1 atm:** Liquid
9.2 Molecular Weight: 147.43
9.3 Boiling Point at 1 atm: 314.33°F = 156.85°C = 429.85°K
9.4 Freezing Point: 58.5°F = 14.7°C = 331.5°K
9.5 Critical Temperature: Currently not available
9.6 Critical Pressure: Currently not available
9.7 Specific Gravity: 1.3889 at 20°C (liquid)
9.8 Liquid Surface Tension: 37.8 dynes/cm = 0.0378 N/m at 20°C
9.9 Liquid Water Interfacial Tension: Currently not available
9.10 Vapor (Gas) Specific Gravity: 5.0
9.11 Ratio of Specific Heats of Vapor (Gas): Currently not available
9.12 Latent Heat of Vaporization: Currently not available
9.13 Heat of Combustion: Currently not available
9.14 Heat of Decomposition: Currently not available
9.15 Heat of Solution: Not pertinent.
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: Currently not available
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: Currently not available

NOTES

1,2,3-TRICHLOROPROPANE

TCN

9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	S L I G H T L Y S O L U B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E