

PENTACHLOROETHANE

PCE

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Ethane pentachloride Ethane, pentachloro- Pentalin	Liquid	Colorless	Sweet chloroform-like odor
Sinks in water.			
<p>KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID AND VAPOR. Wear positive pressure breathing apparatus and special protective clothing. Notify local health and pollution control agencies. Protect water intakes.</p>			
Fire	Not flammable. POISONOUS GASES ARE PRODUCED IN FIRE OR WHEN HEATED TO DECOMPOSITION.		
Exposure	CALL FOR MEDICAL AID. VAPOR POISONOUS; MAY BE FATAL IF INHALED OR ABSORBED THROUGH SKIN. Irritating to eyes, skin, lungs and mucous membrane. Narcotic effect greater than chloroform. More potent central nervous system depressant than chloroform or tetrachloroethane. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. IF IN EYES OR ON SKIN, flush with running water for at least 15 minutes; hold eyelids open if necessary. LIQUID POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED. Irritating to skin and eyes. IF IN EYES OR ON SKIN, flush with running water for at least 15 minutes; hold eyelids open if necessary. Speed in removing material from skin is of extreme importance. Remove and isolate contaminated clothing and shoes at the site. Effects may be delayed; keep victim under observation. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.		
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. 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
Collection Systems: Pump; Dredge

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: 36; Halogenated hydrocarbons
- 2.2 Formula: CCl₂CHCl₂
- 2.3 IMO/UN Designation: 6.1/1669
- 2.4 DOT ID No.: 1669
- 2.5 CAS Registry No.: 76-01-7
- 2.6 NAERG Guide No.: 151
- 2.7 Standard Industrial Trade Classification: 51134

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Wear positive pressure breathing apparatus and special protective overclothing.
- 3.2 **Symptoms Following Exposure:** Irritation of skin, lungs, eyes, and mucous membrane; depression of central nervous system; and toxicity similar to tetrachloroethanes.
- 3.3 **Treatment of Exposure:** INHALATION: Remove to clean air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. INGESTION: If victim is unconscious or having convulsions, do nothing except keep victim warm. EYES: Flush with plenty of water for at least 15 minutes; hold eyelids open if necessary. SKIN: Wash with soap and water. Remove and isolate contaminated clothing and shoes at the site. Speed in removing material from the skin is of extreme importance. Effects may be delayed; keep victim under observation.
- 3.4 TLV-TWA: Not listed.
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: Not listed.
- 3.7 **Toxicity by Ingestion:** Grade 3; LD₅₀ = 500 g/kg (dog)
- 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** Exposure to 121 ppm 8 to 9 hours daily for 23 days caused significant pathological changes in the liver, lungs, and kidneys of cats. Exposure to vapor for 3 weeks caused fatty degeneration of the liver and injury to the kidneys and lungs of cats.
- 3.10 **Vapor (Gas) Irritant Characteristics:** Causes mucous membrane, skin, lung, and cornea (eye) irritation.
- 3.11 **Liquid or Solid Characteristics:** Currently not available
- 3.12 **Odor Threshold:** Currently not available
- 3.13 **IDLH Value:** Not listed.
- 3.14 **OSHA PEL-TWA:** Not listed.
- 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:** None
- 4.2 **Flammable Limits in Air:** Nonflammable.
- 4.3 **Fire Extinguishing Agents:** Not pertinent
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
- 4.5 **Special Hazards of Combustion Products:** Contain irritating and toxic chloride vapors.
- 4.6 **Behavior in Fire:** Decomposes and produces toxic gases.
- 4.7 **Auto Ignition Temperature:** Not pertinent
- 4.8 **Electrical Hazards:** Currently not available
- 4.9 **Burning Rate:** Not pertinent
- 4.10 **Adiabatic Flame Temperature:** Not pertinent
- 4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent.
- 4.12 **Flame Temperature:** Not pertinent
- 4.13 **Combustion Molar Ratio (Reactant to Product):** Not pertinent.
- 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** No reaction
- 5.2 **Reactivity with Common Materials:** No reaction
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
- 5.5 **Polymerization:** Not pertinent
- 5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:** 63/mg/L/48 hr/daphnia magna/ LC₅₀/fresh water.
- 6.2 **Waterfowl Toxicity:** T_{lm} 96: under 1 ppm (species not identified)
- 6.3 **Biological Oxygen Demand (BOD):** Currently not available
- 6.4 **Food Chain Concentration Potential:** Currently not available
- 6.5 **GESAMP Hazard Profile:** Bioaccumulation: 2
Damage to living resources: 3
Human Oral hazard: 2
Human Contact hazard: 0
Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Technical; 96%
- 7.2 **Storage Temperature:** Currently not available
- 7.3 **Inert Atmosphere:** Currently not available
- 7.4 **Venting:** Currently not available
- 7.5 **IMO Pollution Category:** B
- 7.6 **Ship Type:** 2
- 7.7 **Barge Hull Type:** 3

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Poison
- 8.2 **49 CFR Class:** 6.1
- 8.3 **49 CFR Package Group:** II
- 8.4 **Marine Pollutant:** Yes
- 8.5 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue).....	3
Flammability (Red).....	2
Instability (Yellow).....	0
- 8.6 **EPA Reportable Quantity:** 10 pounds
- 8.7 **EPA Pollution Category:** A
- 8.8 **RCRA Waste Number:** U184
- 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:** 202.30
- 9.3 **Boiling Point at 1 atm:** 321°F = 160.5°C = 434°K
- 9.4 **Freezing Point:** -7.6°F = -22°C = 251.2°K
- 9.5 **Critical Temperature:** 734.0°F = 390°C = 663.2°K
- 9.6 **Critical Pressure:** 529 psia = 36 atm = 3.6 MN/m²
- 9.7 **Specific Gravity:** 1.6728 at 25°C
- 9.8 **Liquid Surface Tension:** 34.55 dynes/cm = 0.0346 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** Currently not available
- 9.10 **Vapor (Gas) Specific Gravity:** 7.0 (est)
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available
- 9.12 **Latent Heat of Vaporization:** 78.5 Btu/lb = 43.6 cal/g = 1.83x10⁵ J/kg.
- 9.13 **Heat of Combustion:** Not pertinent
- 9.14 **Heat of Decomposition:** 1,828 Btu/lb = 1,015.8 cal/g = 4.25x10⁵ J/kg
- 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

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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
77	104.400		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	68	2.450

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
	I N S O L U B I L E	50 75 100 125 150 175 200 225 250 275 300	0.031 0.107 0.255 0.501 0.869 1.384 2.072 2.958 4.067 5.424 7.056	300 320 340 360 380 400	0.00381 0.00883 0.01944 0.04092 0.08273 0.16132		C U R R E N T L Y N O T A V A I L A B L E