

PERCHLOROMETHYL MERCAPTAN

PCM

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Thiocarbonyl tetrachloride Trichloromethyl sulfur chloride Trichloromethanesulfonyl chloride Trichloromethane sulfuryl chloride Trichloromethyl sulfochloride	Liquid Sinks in water. Poisonous vapor is produced.	Yellow to orange-red Strong unpleasant odor
<p>KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID AND VAPOR. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Evacuate area in case of large discharge. Stay upwind. Use water spray to "knock down" vapor. Notify local health and pollution control agencies. Protect water intakes.</p>		
Fire	Not flammable. POISONOUS GASES MAY BE PRODUCED WHEN HEATED.	
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR POISONOUS IF INHALED. Irritating to eyes, nose and throat. Move victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED. Irritating to eyes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.</p>	
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
Collection Systems: Pump
Chemical and Physical Treatment:
Neutralize

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.
2.2 **Formula:** Cl₃CSCl
2.3 **IMO/UN Designation:** 6.1/1670
2.4 **DOT ID No.:** 1670
2.5 **CAS Registry No.:** 75-70-7
2.6 **NAERG Guide No.:** 157
2.7 **Standard Industrial Trade Classification:** 51549

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Organic and acid-type canister mask or self-contained breathing apparatus; goggles or face shield; rubber gloves.
- 3.2 **Symptoms Following Exposure:** Inhalation may cause severe irritation of upper respiratory tract; brief exposure to low concentrations may produce central nervous system depression and lung, liver, and heart congestion. Severe exposures may be fatal. Contact of liquid with eyes causes immediate eye irritation and severe conjunctivitis; if not promptly washed away, severe corneal damage may result. Liquid also causes severe local skin irritation; may be absorbed through skin in quantities sufficient to produce systemic poisoning. Ingestion may cause damage to the membranes of the mouth, throat, and gastrointestinal tract. Pain and burning of the mouth and throat, nausea, vomiting, cramps and diarrhea may occur. In severe cases, tissue ulceration and central nervous system depression may result.
- 3.3 **Treatment of Exposure:** Get medical attention at once following all exposures to this compound.
INHALATION: remove victim to fresh air; give mouth-to-mouth resuscitation if needed. **EYES:** flush with water for 15 min; if physician is not available, flush for another 15 min. **SKIN:** flush with water. **INGESTION:** give large amounts of water, then induce vomiting until vomitus is clear; give milk, eggs, or olive oil to soothe stomach.
- 3.4 **TLV-TWA:** 0.1 ppm
3.5 **TLV-STEL:** Not listed.
3.6 **TLV-Ceiling:** Not listed.
3.7 **Toxicity by Ingestion:** Grade 3; oral LD₅₀ = 83 mg/kg (rat)
3.8 **Toxicity by Inhalation:** Currently not available.
3.9 **Chronic Toxicity:** Currently not available
3.10 **Vapor (Gas) Irritant Characteristics:** Currently not available
3.11 **Liquid or Solid Characteristics:** Currently not available
3.12 **Odor Threshold:** Currently not available
3.13 **IDLH Value:** 10 ppm
3.14 **OSHA PEL-TWA:** 0.1 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:**
Not flammable
- 4.2 **Flammable Limits in Air:** Not flammable
- 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: Very irritating vapors formed from hot material. May form toxic phosgene gas, hydrogen chloride, and sulfur dioxide.
- 4.6 **Behavior in Fire:** At elevated temperatures will decompose to carbon tetrachloride, sulfur chloride, and heavy oily polymers.
- 4.7 **Auto Ignition Temperature:** Not pertinent
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Not pertinent
- 4.10 **Adiabatic Flame Temperature:** Currently not available
- 4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent.
- 4.12 **Flame Temperature:** Currently not available
- 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:** Reacts only when hot to give carbon dioxide, hydrochloric acid, and sulfur.
- 5.2 **Reactivity with Common Materials:**
Reacts with iron or steel, evolving carbon tetrachloride. Corrosive to most metals.
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Flood with water, rinse with dilute sodium bicarbonate or lime solution.
- 5.5 **Polymerization:** Not pertinent
- 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:**
None
- 6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: -
Human Oral hazard: 2
Human Contact hazard: II
Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Technical: 97+%
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Pressure-vacuum
- 7.5 **IMO Pollution Category:** Currently not available
- 7.6 **Ship Type:** Currently not available
- 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Poison
- 8.2 **49 CFR Class:** 6.1
- 8.3 **49 CFR Package Group:** I
- 8.4 **Marine Pollutant:** Yes
- 8.5 **NFPA Hazard Classification:** Not listed
- 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:** 185.9
- 9.3 **Boiling Point at 1 atm:** 300°F = 148°C = 421°K
- 9.4 **Freezing Point:** Not pertinent
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.706 at 11°C (liquid)
- 9.8 **Liquid Surface Tension:** 35.02 dynes/cm = 0.03502 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** Not pertinent
- 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent
- 9.11 **Ratio of Specific Heats of Vapor (Gas):**
Not pertinent
- 9.12 **Latent Heat of Vaporization:** (est.) 94 Btu/lb = 52 cal/g = 2.2 X 10⁵ J/kg
- 9.13 **Heat of Combustion:** Not pertinent
- 9.14 **Heat of Decomposition:** Not pertinent
- 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
28	107.400	60	0.300	51	1.048		N O T P E R T I N E N T
30	107.200	61	0.300	52	1.048		
32	107.099	62	0.300	53	1.048		
34	107.000	63	0.300	54	1.048		
36	106.900	64	0.300	55	1.048		
38	106.799	65	0.300	56	1.048		
40	106.700	66	0.300	57	1.048		
42	106.599	67	0.300	58	1.048		
44	106.400	68	0.300	59	1.048		
46	106.299	69	0.300	60	1.048		
48	106.200	70	0.300	61	1.048		
50	106.099	71	0.300	62	1.048		
52	106.000	72	0.300	63	1.048		
54	105.900	73	0.300	64	1.048		
56	105.799	74	0.300	65	1.048		
58	105.700	75	0.300	66	1.048		
60	105.599	76	0.300	67	1.048		
62	105.500	77	0.300	68	1.048		
64	105.400	78	0.300	69	1.048		
66	105.299	79	0.300	70	1.048		
68	105.200	80	0.300	71	1.048		
70	105.099	81	0.300	72	1.048		
72	105.000	82	0.300	73	1.048		
74	104.900	83	0.300	74	1.048		
76	104.799	84	0.300	75	1.048		
78	104.700	85	0.300	76	1.048		

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 L E		N O T		N O T		N O T
	R E A C T S S L O W L		P E R T I N E N T		P E R T I N E N T		P E R T I N E N T