

HEXACHLOROCCYCLOPENTADIENE

HCC

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Perchlorocyclopentadiene	Liquid Sinks in water.	Greenish yellow	Harsh, unpleasant odor
KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID AND VAPOR. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Notify local health and pollution control agencies. Protect water intakes.			
Fire	Not flammable. Poisonous gases may be produced when heated.		
Exposure	CALL FOR MEDICAL AID. VAPOR POISONOUS IF INHALED. If inhaled will cause coughing or difficult breathing. If in eyes, hold eyelids open and flush with plenty of water. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. LIQUID Will burn skin and eyes. If swallowed will cause nausea and vomiting. 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.		
Water Pollution	Dangerous to aquatic life in high 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

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: Not listed.
- 2.2 Formula: C₆Cl₆
- 2.3 IMO/UN Designation: Not listed
- 2.4 DOT ID No.: 2646
- 2.5 CAS Registry No.: 77-47-4
- 2.6 NAERG Guide No.: 151
- 2.7 Standard Industrial Trade Classification: 51139

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Protective clothing, including rubber gloves and rubber shoes or boots; self-contained breathing apparatus; face shield
- 3.2 **Symptoms Following Exposure:** Inhalation of mist is highly irritating to mucous membranes, causing lachrymation, sneezing, and salivation; pulmonary edema may occur. Ingestion causes nausea, vomiting, diarrhea, depression. Contact with eyes causes severe irritation. Liquid is extremely irritating to the skin, causing blistering and burning.
- 3.3 **Treatment of Exposure:** INHALATION: remove victim to fresh air; give artificial respiration and/or oxygen as needed. INGESTION: give large amounts of water and induce vomiting; give saline laxative. EYES: flush with water for at least 15 min.; if irritation remains, get medical attention. SKIN: wash with soap and water until no odor remains.
- 3.4 TLV-TWA: 0.01 ppm
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: Not listed.
- 3.7 **Toxicity by Ingestion:** Grade 4; oral LD₅₀ = 0.505 mg/kg (mouse), 113 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:** 0.15-0.33 ppm
- 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:**
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:** If water is used on adjacent fires, do not allow water to enter drums or storage tanks.
- 4.5 **Special Hazards of Combustion**
Products: Toxic hydrogen chloride, chlorine, and phosgene gases may form in fires.
- 4.6 **Behavior in Fire:** Currently not available
- 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 slowly to form hydrochloric acid. The reaction is not hazardous.
- 5.2 **Reactivity with Common Materials:** In presence of moisture, will corrode iron and other metals. Flammable and explosive hydrogen gas may collect in enclosed space.
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Rinse with dilute solution of sodium bicarbonate or soda ash.
- 5.5 **Polymerization:** Not pertinent
- 5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:**
Highly toxic
- 6.2 **Waterfowl Toxicity:** Highly toxic
- 6.3 **Biological Oxygen Demand (BOD):**
Currently not available
- 6.4 **Food Chain Concentration Potential:**
Possible accumulation of breakdown products
- 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Commercial, 97+%; Synthesis grade
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open
- 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:** Not listed.I
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:** Not listed
- 8.6 **EPA Reportable Quantity:** 10 pounds
- 8.7 **EPA Pollution Category:** A
- 8.8 **RCRA Waste Number:** U130
- 8.9 **EPA FWPCA List:** Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
- 9.2 **Molecular Weight:** 272.7
- 9.3 **Boiling Point at 1 atm:** 462°F = 239°C = 512°K
- 9.4 **Freezing Point:** 50°F = 10°C = 283°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.71 at 20°C (liquid)
- 9.8 **Liquid Surface Tension:** 37.5 dynes/cm = 0.0375 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** Currently not available
- 9.10 **Vapor (Gas) Specific Gravity:** 9.42
- 9.11 **Ratio of Specific Heats of Vapor (Gas):**
Currently not available
- 9.12 **Latent Heat of Vaporization:** (est.) 76 Btu/lb = 42 cal/g = 1.8 X 10⁵ J/kg
- 9.13 **Heat of Combustion:** Currently not available
- 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
50	107.700		N		N	70	8.933
52	107.599		O		O	72	8.579
54	107.500		T		T	74	8.240
56	107.400					76	7.918
58	107.400		P		P	78	7.610
60	107.299		E		E	80	7.317
62	107.200		R		R	82	7.037
64	107.099		T		T	84	6.769
66	107.000		I		I	86	6.514
68	106.900		N		N	88	6.270
70	106.799		E		E	90	6.036
72	106.700		N		N	92	5.813
74	106.599		T		T	94	5.600
76	106.500					96	5.396
						98	5.201
						100	5.014
						102	4.836
						104	4.664

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	220	0.180	220	0.00674		N
	N	230	0.230	230	0.00847		O
	S	240	0.291	240	0.01057		T
	O	250	0.366	250	0.01311		
	L	260	0.458	260	0.01615		P
	U	270	0.568	270	0.01979		E
	B	280	0.702	280	0.02410		R
	L	290	0.862	290	0.02920		T
	E	300	1.052	300	0.03519		I
		310	1.278	310	0.04220		N
		320	1.545	320	0.05036		E
		330	1.859	330	0.05981		R
		340	2.226	340	0.07073		T
		350	2.654	350	0.08328		I
		360	3.151	360	0.09765		N
		370	3.725	370	0.11400		E
		380	4.386	380	0.13270		N
		390	5.144	390	0.15380		T
		400	6.011	400	0.17760		
		410	7.000	410	0.20450		
		420	8.122	420	0.23460		
		430	9.394	430	0.26820		
		440	10.830	440	0.30580		
		450	12.440	450	0.34750		
		460	14.260	460	0.39380		