

CHLOROPICRIN

CPL

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Nitrochloroform Nitrotrichloromethane Picfume Trichloronitromethane	Oily liquid Colorless Extremely irritating odor
Sinks in water. Poisonous vapor is produced.	
<p>Evacuate. KEEP PEOPLE AWAY. Avoid inhalation. AVOID CONTACT WITH LIQUID AND VAPOR. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Notify local health and pollution control agencies.</p>	
Fire	Not flammable. POISONOUS GASES ARE PRODUCED IN FIRE. Containers may explode in fire. Wear chemical protective suit with self-contained breathing apparatus. Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID. 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. LIQUID POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED. Will burn skin and 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. DO NOT INDUCE VOMITING.
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; Dredge

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: Not listed.
- 2.2 Formula: Cl₃CNO₂
- 2.3 IMO/UN Designation: 6.1/1580
- 2.4 DOT ID No.: 1580
- 2.5 CAS Registry No.: 76-06-2
- 2.6 NAERG Guide No.: 154
- 2.7 Standard Industrial Trade Classification: 51139

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Self contained breathing apparatus, rubber gloves, protective clothing
- 3.2 **Symptoms Following Exposure:** Inhalation causes nausea, eye watering, vomiting, bronchitis, and pulmonary edema. Vapor is a powerful tear gas. Liquid irritates and burns skin and causes severe burns of eyes. Ingestion causes severe irritation of mouth and stomach.
- 3.3 **Treatment of Exposure:** Get medical attention following all exposures to this compound. INHALATION: remove from exposure; support respiration. EYES: flush with copious quantities of water for at least 15 min. SKIN: wash with water for 15 min. INGESTION: do NOT induce vomiting; give large amounts of water.
- 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 = 250 mg/kg (rat)
- 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** Currently not available
- 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause severe irritation of eyes and throat and can cause eye or lung injury. They cannot be tolerated even at low concentrations.
- 3.11 **Liquid or Solid Characteristics:** Severe skin irritant. Causes second-and third-degree burns on short contact and is very injurious to the eyes.
- 3.12 **Odor Threshold:** 1.1 ppm
- 3.13 **IDLH Value:** 2 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:** Cool exposed containers with water.
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
- 4.5 **Special Hazards of Combustion Products:** Not pertinent
- 4.6 **Behavior in Fire:** Compound forms a powerful tear gas when heated. Heated material may detonate under fire conditions.
- 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:** 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:**
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: (3)
Human Oral hazard: 2
Human Contact hazard: II
Reduction of amenities: XXX

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99%
- 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:** No
- 8.5 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue)	4
Flammability (Red)	0
Instability (Yellow)	3
- 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:** 164.4
- 9.3 **Boiling Point at 1 atm:** 234°F = 112°C = 385°K
- 9.4 **Freezing Point:** -83°F = -64°C = 209°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.64 at 25°C (liquid)
- 9.8 **Liquid Surface Tension:** 32.3 dynes/cm = 0.0323 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** (est.) 30 dynes/cm = 0.03 N/m at 20°C
- 9.10 **Vapor (Gas) Specific Gravity:** 5.7
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.0991
- 9.12 **Latent Heat of Vaporization:** 103 Btu/lb = 57.3 cal/g = 2.4 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:** 48.16 cal/g
- 9.18 **Limiting Value:** Currently not available
- 9.19 **Reid Vapor Pressure:** Currently not available

NOTES

CHLOROPICRIN

CPL

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
34	105.400	51	0.400	51	1.048	55	1.214
36	105.200	52	0.400	52	1.048	60	1.166
38	105.099	53	0.400	53	1.048	65	1.121
40	104.900	54	0.400	54	1.048	70	1.078
42	104.799	55	0.400	55	1.048	75	1.038
44	104.700	56	0.400	56	1.048	80	0.999
46	104.500	57	0.400	57	1.048	85	0.963
48	104.400	58	0.400	58	1.048	90	0.929
50	104.200	59	0.400	59	1.048	95	0.897
52	104.099	60	0.400	60	1.048	100	0.866
54	104.000	61	0.400	61	1.048	105	0.837
56	103.799	62	0.400	62	1.048	110	0.809
58	103.700	63	0.400	63	1.048	115	0.783
60	103.599	64	0.400	64	1.048	120	0.758
62	103.400	65	0.400	65	1.048	125	0.734
64	103.299	66	0.400	66	1.048	130	0.712
66	103.099	67	0.400	67	1.048	135	0.690
68	103.000	68	0.400	68	1.048	140	0.670
70	102.900	69	0.400	69	1.048	145	0.650
72	102.700	70	0.400	70	1.048	150	0.631
74	102.599	71	0.400	71	1.048	155	0.613
76	102.400	72	0.400	72	1.048	160	0.596
78	102.299	73	0.400	73	1.048	165	0.580
80	102.200	74	0.400	74	1.048	170	0.564
82	102.000	75	0.400	75	1.048	175	0.549
84	101.900	76	0.400	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
34	0.224	0	0.035	0	0.00115	0	0.123
36	0.221	10	0.051	10	0.00165	20	0.127
38	0.218	20	0.073	20	0.00233	40	0.130
40	0.215	30	0.104	30	0.00325	60	0.133
42	0.213	40	0.146	40	0.00446	80	0.136
44	0.210	50	0.201	50	0.00605	100	0.139
46	0.207	60	0.275	60	0.00811	120	0.141
48	0.204	70	0.371	70	0.01073	140	0.144
50	0.201	80	0.496	80	0.01406	160	0.147
52	0.198	90	0.655	90	0.01824	180	0.149
54	0.195	100	0.856	100	0.02343	200	0.152
56	0.192	110	1.109	110	0.02982	220	0.155
58	0.189	120	1.424	120	0.03763	240	0.157
60	0.187	130	1.813	130	0.04709	260	0.159
62	0.184	140	2.290	140	0.05849	280	0.162
64	0.181	150	2.870	150	0.07210	300	0.164
66	0.178	160	3.571	160	0.08826	320	0.166
68	0.175	170	4.413	170	0.10730	340	0.168
70	0.172	180	5.416	180	0.12970	360	0.170
72	0.169	190	6.607	190	0.15570	380	0.172
74	0.166	200	8.010	200	0.18600	400	0.174
76	0.163	210	9.656	210	0.22080	420	0.176
78	0.161	220	11.580	220	0.26080	440	0.178
80	0.158	230	13.800	230	0.30650		
82	0.155	240	16.380	240	0.35850		
84	0.152						