

# CHLOROACETIC ACID

MCA

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Chloroacetic acid Monochloroacetic acid				Solid	Cloudy white solid; liquid is colorless to light yellow	Strong vinegar-like odor
Mixes with water.						
Keep people away. Avoid contact with liquid. Call fire department. Notify local health and pollution control agencies.						
<b>Fire</b>	Combustible. POISONOUS GASES MAY BE PRODUCED IN FIRE. Flood discharge area with water.					
<b>Exposure</b>	Call for medical aid.  LIQUID OR SOLID Will burn skin and eyes. Harmful if swallowed. 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.					
<b>Water Pollution</b>	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.					

<b>1. CORRECTIVE RESPONSE ACTIONS</b> Dilute and disperse Stop discharge	<b>2. CHEMICAL DESIGNATIONS</b> 2.1 <b>CG Compatibility Group:</b> Not listed. 2.2 <b>Formula:</b> ClCH <sub>2</sub> COOH 2.3 <b>IMO/UN Designation:</b> Liquid: 8/1750; Solid: 8/1751 2.4 <b>DOT ID No.:</b> 1751 (solid), 1750 (liquid) 2.5 <b>CAS Registry No.:</b> 79-11-8 2.6 <b>NAERG Guide No.:</b> 153 2.7 <b>Standard Industrial Trade Classification:</b> 51377
<b>3. HEALTH HAZARDS</b>	
3.1 <b>Personal Protective Equipment:</b> Self-contained breathing apparatus; vinyl or neoprene rubber gloves; goggles and protective face shield; rubberized or acid-resistant clothing	
3.2 <b>Symptoms Following Exposure:</b> Inhalation causes mucous membrane irritation. Contact with liquid causes severe irritation and burns of the eyes and irritation and burns of skin. Ingestion causes burns of mouth and stomach.	
3.3 <b>Treatment of Exposure:</b> Get medical attention for all exposures to this compound. INHALATION: remove victim to fresh air and enforce rest until medical attention is obtained. EYES: flush with running water for 15 min. SKIN: flush with water; get treatment for burns. INGESTION: give large amount of water.	
3.4 <b>TLV-TWA:</b> Not listed.	
3.5 <b>TLV-STEL:</b> Not listed.	
3.6 <b>TLV-Ceiling:</b> Not listed.	
3.7 <b>Toxicity by Ingestion:</b> Grade 3; oral LD <sub>50</sub> = 76.2 mg/kg (rat)	
3.8 <b>Toxicity by Inhalation:</b> Currently not available.	
3.9 <b>Chronic Toxicity:</b> Currently not available	
3.10 <b>Vapor (Gas) Irritant Characteristics:</b> Vapors cause severe irritation of eyes and throat and can cause eye and lung injury. They cannot be tolerated even at low concentrations.	
3.11 <b>Liquid or Solid Characteristics:</b> Severe skin irritant. Causes second- and third-degree burns on short contact and is very injurious to the eyes.	
3.12 <b>Odor Threshold:</b> 0.15 mg/m <sup>3</sup>	
3.13 <b>IDLH Value:</b> Not listed.	
3.14 <b>OSHA PEL-TWA:</b> Not listed.	
3.15 <b>OSHA PEL-STEL:</b> Not listed.	
3.16 <b>OSHA PEL-Ceiling:</b> Not listed.	
3.17 <b>EPA AEGL:</b> Not listed	

## 4. FIRE HAZARDS

- 4.1 **Flash Point:** (almost nonflammable) 259°F C.C.
- 4.2 **Flammable Limits in Air:** 8% (LFL)
- 4.3 **Fire Extinguishing Agents:** Dry chemical, carbon dioxide, water
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
- 4.5 **Special Hazards of Combustion Products:** Hydrogen chloride and phosgene may be generated.
- 4.6 **Behavior in Fire:** Not pertinent
- 4.7 **Auto Ignition Temperature:** Currently not available difficult to ignite
- 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:** 7.1 (calc.)
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** 4.0 (calc.)
- 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:** Causes mild corrosion of common metals
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Flush with water, rinse with 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: 2  
Human Oral hazard: 2  
Human Contact hazard: II  
Reduction of amenities: XX

## 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Commercial: 97.5+%
- 7.2 **Storage Temperature:** Solid: ambient; Liquid: 70°C (158°F)
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open (flame arrester)
- 7.5 **IMO Pollution Category:** D
- 7.6 **Ship Type:** 2
- 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:** II
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:**
- | Category                  | Classification |
|---------------------------|----------------|
| Health Hazard (Blue)..... | 3              |
| Flammability (Red).....   | 1              |
| Instability (Yellow)..... | 0              |
- 8.6 **EPA Reportable Quantity:** 100 pounds
- 8.7 **EPA Pollution Category:** B
- 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:** Solid
- 9.2 **Molecular Weight:** 94.5
- 9.3 **Boiling Point at 1 atm:** 372°F = 189°C = 462°K
- 9.4 **Freezing Point:** 140°F = 60°C = 333°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.58 at 20°C (solid)
- 9.8 **Liquid Surface Tension:** 33 dynes/cm = 0.033 N/m at 80°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:** 250 Btu/lb = 139 cal/g = 5.82 X 10<sup>5</sup> J/kg
- 9.13 **Heat of Combustion:** (solid) -1,814 Btu/lb = -1,008 cal/g = -42.17 X 10<sup>5</sup> J/kg
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** -63 Btu/lb = -35 cal/g = -1.5 X 10<sup>5</sup> J/kg
- 9.16 **Heat of Polymerization:** Not pertinent
- 9.17 **Heat of Fusion:** 31.06 cal/g
- 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
150	85.480		N		N		N
160	85.059		O		O		O
170	84.639		T		T		T
180	84.230						
190	83.809		P		P		P
200	83.400		E		E		E
210	82.980		R		R		R
220	82.559		T		T		T
230	82.150		I		I		I
240	81.730		N		N		N
250	81.320		E		E		E
260	80.900		N		N		N
270	80.480		T		T		T
280	80.070						
290	79.650						
300	79.230						
310	78.820						
320	78.400						
330	77.990						
340	77.570						
350	77.150						

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
39	72.000	150	0.081	150	0.00117		N
		160	0.111	160	0.00158		O
		170	0.151	170	0.00210		T
		180	0.202	180	0.00278		
		190	0.269	190	0.00365		P
		200	0.356	200	0.00475		E
		210	0.466	210	0.00612		R
		220	0.605	220	0.00784		T
		230	0.780	230	0.00996		I
		240	0.998	240	0.01256		N
		250	1.269	250	0.01574		E
		260	1.602	260	0.01960		R
		270	2.010	270	0.02424		T
		280	2.505	280	0.02982		I
		290	3.105	290	0.03647		N
		300	3.827	300	0.04435		E
		310	4.692	310	0.05366		R
		320	5.721	320	0.06459		T
		330	6.941	330	0.07738		I
		340	8.381	340	0.09226		N
		350	10.070	350	0.10950		E
		360	12.050	360	0.12940		R
		370	14.360	370	0.15230		T