

# 2-CHLOROPROPIONIC ACID

CLA

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> alpha-Chloropropionic acid Propanoic acid, 2-chloro- Propionic acid, 2-chloro-		Liquid	Pale yellow	Slight
		Sinks and mixes with water.		
<p><b>Keep people away. AVOID CONTACT WITH LIQUID AND VAPOR. Shut off ignition sources. Call fire department.</b>  <b>Wear self-contained positive pressure breathing apparatus and full protective clothing.</b>  <b>Notify local health and pollution control agencies.</b>  <b>Protect water intakes.</b></p>				
<b>Fire</b>	Combustible. Poisonous gases may be produced in fire. Wear self-contained positive pressure breathing apparatus and full protective clothing. Extinguish small fires: dry chemical, CO <sub>2</sub> , water spray or foam; large fires: water spray, fog or foam. Move container from fire area if you can do it without risk. Cool containers exposed to flames with plenty of water from the side until well after fire is out.			
<b>Exposure</b>	CALL FOR MEDICAL AID.  VAPOR Harmful if inhaled May cause lung and eye injury. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.  LIQUID Will burn skin and eyes. Harmful if absorbed through skin. Harmful if swallowed. Remove contaminated clothing and shoes at the site. Flush with running water for at least 15 min.; hold eyelids open if necessary. IF IN EYES OR ON SKIN, wash skin with soap and water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.			
<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.			

### 1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse  
 Stop discharge  
 Chemical and Physical Treatment:  
 Neutralize

### 2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** 4; Organic acid  
 2.2 **Formula:** CH<sub>2</sub>CHClCOOH  
 2.3 **IMO/UN Designation:** 8/2511  
 2.4 **DOT ID No.:** 2511  
 2.5 **CAS Registry No.:** 598-78-7  
 2.6 **NAERG Guide No.:** 153  
 2.7 **Standard Industrial Trade Classification:** 51377

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Wear self-contained positive pressure breathing apparatus and full protective clothing.
- 3.2 **Symptoms Following Exposure:** Harmful if inhaled. Irritating to throat. May cause severe skin and eye burns. Harmful if absorbed through skin.
- 3.3 **Treatment of Exposure:** INHALATION: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. EYES OR SKIN: Flush with running water for at least 15 min.; hold eyelids open if necessary. Wash skin with soap and water. Remove and isolate contaminated clothing and shoes at the site. INGESTION: If conscious have victim drink eggs, milk or water. DO NOT INDUCE VOMITING. If unconscious or having convulsions, do nothing except keep victim warm.
- 3.4 **TLV-TWA:** 0.1 ppm (skin)  
 3.5 **TLV-STEL:** Not listed.  
 3.6 **TLV-Ceiling:** Not listed.  
 3.7 **Toxicity by Ingestion:** Grade 2; LD<sub>50</sub> = 500 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 and lung injury. They cannot be tolerated even at low concentrations.  
 3.11 **Liquid or Solid Characteristics:** Causes smarting of the skin and first-degree burns on short exposures; may cause second-degree burns on long exposure.  
 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:** 225°F. C.C.  
 4.2 **Flammable Limits in Air:** 3.6% (LFL) (calculated)  
 4.3 **Fire Extinguishing Agents:** Small fires: dry chemical, CO<sub>2</sub>, water spray or foam; large fires: water spray, fog or foam. Water or foam may cause frothing.  
 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent  
 4.5 **Special Hazards of Combustion Products:** May contain hydrogen chloride and phosgene.  
 4.6 **Behavior in Fire:** Fires produces highly toxic chloride fumes.  
 4.7 **Auto Ignition Temperature:** 932°F.  
 4.8 **Electrical Hazards:** Not applicable  
 4.9 **Burning Rate:** Currently not available  
 4.10 **Adiabatic Flame Temperature:** Currently not available  
 4.11 **Stoichiometric Air to Fuel Ratio:** 14.3 (calc.)  
 4.12 **Flame Temperature:** Currently not available  
 4.13 **Combustion Molar Ratio (Reactant to Product):** 6.0 (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:** Only aluminum, stainless steel or steel covered with a protective lining or coating may contact the liquid or vapor.  
 5.3 **Stability During Transport:** Stable  
 5.4 **Neutralizing Agents for Acids and Caustics:** Currently not available  
 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: 2  
 Human Oral hazard: 1  
 Human Contact hazard: II  
 Reduction of amenities: XX

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99%  
 7.2 **Storage Temperature:** Ambient  
 7.3 **Inert Atmosphere:** No  
 7.4 **Venting:** Open  
 7.5 **IMO Pollution Category:** (C)  
 7.6 **Ship Type:** 3  
 7.7 **Barge Hull Type:** Currently not available

### 8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Corrosive material  
 8.2 **49 CFR Class:** 8  
 8.3 **49 CFR Package Group:** III  
 8.4 **Marine Pollutant:** No  
 8.5 **NFPA Hazard Classification:**
- | Category                  | Classification |
|---------------------------|----------------|
| Health Hazard (Blue)..... | -              |
| Flammability (Red).....   | 1              |
| Instability (Yellow)..... | 0              |
- 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:** 108.53  
 9.3 **Boiling Point at 1 atm:** 366°F. = 186°C. = 459.2°K.  
 9.4 **Freezing Point:** Currently not available  
 9.5 **Critical Temperature:** 750°F = 399°C = 672°K (est.)  
 9.6 **Critical Pressure:** Currently not available  
 9.7 **Specific Gravity:** 1.2585 at 20°C.  
 9.8 **Liquid Surface Tension:** Currently not available  
 9.9 **Liquid Water Interfacial Tension:** Currently not available  
 9.10 **Vapor (Gas) Specific Gravity:** 3.7  
 9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available  
 9.12 **Latent Heat of Vaporization:** 175 Btu/lb = 97 cal/g = 4.06X10<sup>5</sup> J/kg  
 9.13 **Heat of Combustion:** Currently not available  
 9.14 **Heat of Decomposition:** Not pertinent  
 9.15 **Heat of Solution:** Currently not available  
 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
	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		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

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
	M I S C I B L E	125 150 175 200 225 250 275 300 325 350	0.029 0.082 0.196 0.417 0.812 1.475 2.531 4.143 6.519 9.181	125 150 175 200 225 250 275 300 325 350	0.00064 0.00171 0.00389 0.00794 0.01488 0.02611 0.04341 0.06906 0.10585 0.15719		C U R R E N T L Y  N O T  A V A I L A B L E