

# CHLOROACETALDEHYDE

CHO

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Acetaldehyde, chloro- Chloroacetaldehyde, monomer Chloroethanal 2-Chloro-1-ethanal Monochloroacetaldehyde	Liquid	Colorless	Very sharp, irritating
Sinks and mixes with water. Irritating vapor produced.			
<p><b>KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID AND VAPOR.</b> Evacuate. Shut off ignition sources. Call fire department. Wear positive pressure breathing apparatus and chemical protective suit. Stay upwind and use water spray to knock down vapor. Notify local health and pollution control agencies. Protect water intakes.</p>			
<b>Fire</b>	<p>COMBUSTIBLE. POISONOUS GASES ARE PRODUCED IN FIRE AND WHEN HEATED TO DECOMPOSITION. Containers may explode in fire. Vapor may explode if ignited in an enclosed area. Combat fire from safe distance or protected location. Extinguish small fire with water spray, fog or foam; large fires with water spray, fog or foam. Cool exposed containers with water.</p>		
<b>Exposure</b>	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR POISONOUS IF INHALED OR ABSORBED THROUGH THE SKIN. Irritating to eyes, nose, throat, lungs, and skin. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID POISONOUS IF SWALLOWED OR ABSORBED THROUGH SKIN. Contact may cause burns to skin and eyes. IF IN EYES OR ON SKIN, immediately flush with running water for at least 15 minutes; lift eyelids occasionally if appropriate. Speed in removing material from skin is of extreme importance. IF SWALLOWED and victim is CONSCIOUS, get victim to induce vomiting by touching back of throat or taking syrup of Ipecac. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.</p>		
<b>Water Pollution</b>	<p>Effects 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.</p>		

### 1. CORRECTIVE RESPONSE ACTIONS

Stop discharge  
Dilute and disperse  
Do not burn

### 2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.  
2.2 Formula: CICH<sub>2</sub>CHO  
2.3 IMO/UN Designation: 6.1/2232  
2.4 DOT ID No.: 2232  
2.5 CAS Registry No.: 107-20-0  
2.6 NAERG Guide No.: 153  
2.7 Standard Industrial Trade Classification: 51621

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Wear positive pressure breathing apparatus and special chemical protective clothing.
- 3.2 **Symptoms Following Exposure:** Poisonous; may be fatal if inhaled, swallowed or absorbed through the skin. Overexposure causes intense irritation and edema of the eyes, mucous membranes, respiratory tract, and skin. Prolonged exposure causes tissue destruction, chemical burns and residual scarring. The eyes may experience permanent damage.
- 3.3 **Treatment of Exposure:** INHALATION: Move victim to fresh air; call emergency medical care. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. EYES: Immediately flush with running water for at least 15 minutes; lift upper and lower eyelids occasionally. SKIN: Immediately flush with running water for at least 15 minutes. Speed in removing material from skin is important. Remove and isolate contaminated clothing and shoes at the site. Keep victim quiet and maintain normal body temperature. Effects may be delayed; Keep victim under observation. INGESTION: If CONSCIOUS, get patient to induce vomiting by touching a finger to the back of the throat or by taking syrup of Ipecac.
- 3.4 TLV-TWA: Not listed.  
3.5 TLV-STEL: Not listed.  
3.6 TLV-Ceiling: 1 ppm  
3.7 **Toxicity by Ingestion:** Grade 4; LD<sub>50</sub> = 23 mg/kg (rat)  
3.8 **Toxicity by Inhalation:** Currently not available.  
3.9 **Chronic Toxicity:** Showed mutagenic properties in the Ames test and in chinese hamsters and rats.  
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:** Severe skin irritant. Causes second and third degree burns on short contact and is very injurious to the eyes.  
3.12 **Odor Threshold:** <1 ppm  
3.13 **IDLH Value:** 45 ppm  
3.14 **OSHA PEL-TWA:** Not listed.  
3.15 **OSHA PEL-STEL:** Not listed.  
3.16 **OSHA PEL-Ceiling:** 1 ppm  
3.17 **EPA AEGL:** Not listed

### 4. FIRE HAZARDS

- 4.1 **Flash Point:** 190°F C.C. (40% aqueous solution)  
4.2 **Flammable Limits in Air:** Currently not available  
4.3 **Fire Extinguishing Agents:** Small fires: Dry chemical, carbon dioxide, water spray or foam. Large fires: Water spray, fog or foam.  
4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent  
4.5 **Special Hazards of Combustion Products:** Contain poisonous and irritating chloride gases.  
4.6 **Behavior in Fire:** May yield highly toxic chloride fumes when heated to decomposition.  
4.7 **Auto Ignition Temperature:** Currently not available  
4.8 **Electrical Hazards:** Currently not available  
4.9 **Burning Rate:** Currently not available  
4.10 **Adiabatic Flame Temperature:** Currently not available  
4.11 **Stoichiometric Air to Fuel Ratio:** 9.5 (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:** Reacts with water to form a hydrate; some heat is liberated. Reaction occurs when the concentration in water exceeds 50%.  
5.2 **Reactivity with Common Materials:** Contact with acids and oxidizing materials may cause fires or explosions.  
5.3 **Stability During Transport:** Stable  
5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent  
5.5 **Polymerization:** Not pertinent (40% aqueous solution)  
5.6 **Inhibitor of Polymerization:** Not pertinent (40% aqueous solution)

### 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: 3  
Human Contact hazard: II  
Reduction of amenities: XXX

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 40% Aqueous solution  
7.2 **Storage Temperature:** Not listed  
7.3 **Inert Atmosphere:** Not listed  
7.4 **Venting:** Not listed  
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)..... | 3              |
| Flammability (Red).....   | 2              |
| Instability (Yellow)..... | -              |
- 8.6 **EPA Reportable Quantity:** 1000 pounds  
8.7 **EPA Pollution Category:** C  
8.8 **RCRA Waste Number:** P023  
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:** 78.5  
9.3 **Boiling Point at 1 atm:** 185°F = 85°C = 358.2°K  
9.4 **Freezing Point:** 3°F = -16.3°C = 256.9°K  
9.5 **Critical Temperature:** Not pertinent  
9.6 **Critical Pressure:** Not pertinent  
9.7 **Specific Gravity:** 1.19 at 25°C  
9.8 **Liquid Surface Tension:** Currently not available  
9.9 **Liquid Water Interfacial Tension:** Not pertinent  
9.10 **Vapor (Gas) Specific Gravity:** 2.7  
9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available  
9.12 **Latent Heat of Vaporization:** Currently not available  
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
77	74.300		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	113	1.934		N O T  P E R T I N E N T		N O T  P E R T I N E N T