Material Safety Data Sheet
Chloroacetic acid
ACC# 95538

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Chloroacetic acid  
**Catalog Numbers:** AC108510000, AC108510010, AC108510025, AC108510040, AC108512500, AC220320000, AC220321000, A176-500  
**Synonyms:** Chloroethanoic acid; Monochloroacetic acid; Monochloroethanoic acid; MCA; MCAA; alpha-Chloroacetic acid.  
**Company Identification:**  
Fisher Scientific  
1 Reagent Lane  
Fair Lawn, NJ 07410  
**For information, call:** 201-796-7100  
**Emergency Number:** 201-796-7100  
**For CHEMTREC assistance, call:** 800-424-9300  
**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>79-11-8</td>
<td>Chloroacetic acid</td>
<td>99</td>
<td>201-178-4</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: colorless or white solid.  
**Danger!** Poison! May be fatal if absorbed through the skin. Causes burns by all exposure routes. Harmful if inhaled or swallowed. Corrosive to metal. Hygroscopic (absorbs moisture from the air). Before using this product, make sure that personal protective equipment and engineering controls are used and operating, and also that first aid treatments and procedures are available and understood.  
**Target Organs:** Kidneys, heart, central nervous system, liver, lungs, respiratory system, eyes, skin.

**Potential Health Effects**

**Eye:** Causes eye burns.  
**Skin:** May be fatal if absorbed through the skin. Causes skin burns. Substance is rapidly absorbed through the skin. Not expected to cause an allergic skin reaction. In an accident, about 10% of a 24-year-old employee's skin surface was exposed to warm, liquid MCAA. Prompt &
thorough washing with water for about 1 hour seemed to remove the soluble salt. Skin burns were considered first degree. The victim's condition suddenly worsened while under observation at the plant dispensary, & he was transported to the hospital. On the journey there, he began to convulse; he died within 10-11 hours of the accident. The autopsy showed congestion, hemorrhage, & confluent petechia of the heart, lungs, & thymus. (Doc of TLV)

**Ingestion:** Harmful if swallowed. Causes gastrointestinal tract burns.

**Inhalation:** Harmful if inhaled. May cause severe irritation of the upper respiratory tract with pain, burns, and inflammation. Can produce delayed pulmonary edema.

**Chronic:** May cause liver and kidney damage. Effects may be delayed. May cause lung damage.

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### Section 4 - First Aid Measures

**Eyes:** Get medical aid immediately. Extensive irrigation with water is required (at least 30 minutes).

**Skin:** POISON material. In case of contact, get medical aid immediately. Immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

**Ingestion:** If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** Chloroacetic acid causes competitive inhibition of acetate oxidation and acetylates sulfhydryl residues in the liver and kidney.

**Antidote:** Timely administration of intravenous sodium dichloroacetate (SDCA) may be life saving in cases of serious monochloroacetate intoxication. SDCA is not approved for medical use in the United States. Treatment is symptomatic and supportive without it.

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### Section 5 - Fire Fighting Measures

**General Information:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Contact with metals may evolve flammable hydrogen gas.

**Extinguishing Media:** Use water spray, dry chemical, "alcohol resistant" foam, or carbon dioxide.

**Flash Point:** 126 deg C ( 258.80 deg F)

**Autoignition Temperature:** 470 deg C ( 878.00 deg F)

**Explosion Limits, Lower:** 8.0.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 1; Instability: 0

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### Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Avoid generating dusty
conditions. Provide ventilation. Evacuate unnecessary personnel. Carefully neutralize the dilute spill with lime slurry, soda ash, limestone, caustic soda or other alkaline material. Ensure clean-up is conducted by trained personnel only.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Do not breathe dust, mist, or vapor. Do not get in eyes, on skin, or on clothing. Container should be opened by a technically qualified person. Discard contaminated shoes.

Storage: Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Poison room locked. Do not store in metal containers. Do not store near alkaline substances. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroacetic acid</td>
<td>0.5 ppm TWA (inhalable fraction and vapor); Skin - potential significant contribution to overall exposure by the cutaneous route</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Chloroacetic acid: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles and face shield.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Appearance: colorless or white

Odor: pungent odor

pH: 1.90 (1% solution)

Vapor Pressure: 0.065 mm Hg @ 25 deg C
**Vapor Density:** 3.2 (air=1)  
**Evaporation Rate:** Not available.  
**Viscosity:** Not available.  
**Boiling Point:** 189 deg C  
**Freezing/Melting Point:** 61-63 deg C  
**Decomposition Temperature:** 250 deg C  
**Solubility:** Soluble.  
**Specific Gravity/Density:** 1.58 @ 20°C  
**Molecular Formula:** C₂H₃ClO₂  
**Molecular Weight:** 94.5

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### Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions. Deliquescent (tending to absorb atmospheric water vapor and become liquid).

**Conditions to Avoid:** Dust generation, moisture, excess heat.

**Incompatibilities with Other Materials:** Metals, strong oxidizing agents, strong bases, alcohols, amines.

**Hazardous Decomposition Products:** Hydrogen chloride, carbon monoxide, carbon dioxide, formaldehyde.

**Hazardous Polymerization:** Will not occur.

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### Section 11 - Toxicological Information

**RTECS#:**

**CAS # 79-11-8:** AF8575000  
**LD50/LC50:**  

**CAS # 79-11-8:**  
Inhalation, rat: LC₅₀ = 180 mg/m³;  
Oral, rat: LD₅₀ = 55 mg/kg;

Dermal LD₅₀ rat: 145 mg/kg (ACGIH). Dermal LD₅₀ rabbit: 177.8 mg/kg (Dow Chemical Company).

**Carcinogenicity:**  
CAS # 79-11-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** Accidental dermal exposures of humans to monochloroacetic acid have resulted in severe chemical burns, acute systemic toxicity, and death.

**Teratogenicity:** No data available.

**Reproductive Effects:** No data available.

**Mutagenicity:** No data available.

**Neurotoxicity:** No data available.

**Other Studies:**

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### Section 12 - Ecological Information
Ecotoxicity: Daphnia: Daphnia: 88 mg/l; 48h; EC50

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Name:</td>
<td>CHLOROACETIC ACID, SOLID</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>6.1</td>
</tr>
<tr>
<td>UN Number:</td>
<td>UN1751</td>
</tr>
<tr>
<td>Packing Group:</td>
<td>II</td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 79-11-8 is listed on the TSCA inventory.

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.

Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs
CAS# 79-11-8: 100 lb final RQ; 45.4 kg final RQ

SARA Section 302 Extremely Hazardous Substances
CAS# 79-11-8: 100 lb lower threshold TPQ; 10000 lb upper threshold TPQ

SARA Codes
CAS # 79-11-8: immediate.

Section 313
This material contains Chloroacetic acid (CAS# 79-11-8, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:
CAS# 79-11-8 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
CAS# 79-11-8 can be found on the following state right to know lists: New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
T N
Risk Phrases:
R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R 34 Causes burns.
R 50 Very toxic to aquatic organisms.

Safety Phrases:
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 60 This material and its container must be disposed of as hazardous waste.
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.
S 63 In case of accident by inhalation: remove casualty to fresh air and keep at rest.

WGK (Water Danger/Protection)
CAS# 79-11-8: 2

Canada - DSL/NDSL
CAS# 79-11-8 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of D1A, E.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List
CAS# 79-11-8 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 2/09/1999
The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, however arising, even if Fisher has been advised of the possibility of such damages.