1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product identifier**
- **Product Name**: Chloroacetic acid
- **Product Code**: SC-211072

**Recommended use of the chemical and restrictions on use**
For research use only. Not intended for diagnostic or therapeutic use.

**Details of the supplier of the safety data sheet**
Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

**Emergency telephone number**
Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification**
- **Acute toxicity - Oral**: Category 3
- **Acute toxicity - Dermal**: Category 3
- **Acute toxicity - Inhalation (Vapors)**: Category 1
- **Acute toxicity - Inhalation (Dusts/Mists)**: Category 2
- **Skin corrosion/irritation**: Category 1 Sub-category B
- **Serious eye damage/eye irritation**: Category 1
- **Specific target organ toxicity (single exposure)**: Category 3

**Label elements**
- **Signal word**: Danger
- **Hazard statements**
  - Toxic if swallowed
  - Toxic in contact with skin
  - Fatal if inhaled
  - Causes severe skin burns and eye damage
  - May cause respiratory irritation. May cause drowsiness or dizziness

**Symbols/Pictograms**

**Precautionary Statements - Prevention**
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Wear protective gloves/protective clothing/eye protection/face protection
- Do not breathe dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Wear respiratory protection
Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Hazards not otherwise classified (HNOC) Not applicable

Other Information

NFPA Health hazards 3 Flammability 1 Stability 0 Physical and chemical properties -
HMIS Health hazards 3 Flammability 1 Physical hazards 0 Personal protection -

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroacetic acid</td>
<td>79-11-8</td>
<td>&gt;98</td>
<td>= 55 mg/kg (Rat)</td>
<td>= 250 mg/kg (Rabbit)</td>
<td>&gt; 0.25 mg/L (Rat) 1 h</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

General advice
Immediate medical attention is required.

Eye contact
Keep eye wide open while rinsing. Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area.

Skin Contact
Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation
Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Immediate medical attention is required. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.
Self-protection of the first aider
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed
Symptoms
No information available.

Indication of any immediate medical attention and special treatment needed
Note to physicians
Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
None.

Specific hazards arising from the chemical
Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes. Thermal decomposition can lead to release of toxic/corrosive gases and vapors.

Hazardous combustion products
Carbon oxides. Phosgene.

Explosion data
Sensitivity to Mechanical Impact
No information available.

Sensitivity to Static Discharge
No information available.

Protective equipment and precautions for firefighters
Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Personal precautions
Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions
Environmental precautions
Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up
Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Avoid creating dust. Dam up. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE
Precautions for safe handling
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Noxious vapor/odor. Thermal decomposition can lead to release of toxic/corrosive gases and vapors.

Conditions for safe storage, including any incompatibilities
Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Store at room temperature.
Incompatible materials: Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure Guidelines

Appropriate engineering controls
Engineering Controls: Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment
Eye/face protection: Tight sealing safety goggles. Face protection shield.
Skin and Body Protection: Wear protective gloves and protective clothing.
Respiratory protection: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
General Hygiene Considerations: When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
Appearance: No information available
Odor: No information available

Property
Values
pH: No information available
Melting point/freezing point: 60 °C
Boiling point: 189 °C
Flash point: 126 °C CC (closed cup)
Density: No information available
Evaporation rate: No information available
Upper flammability limits: No information available
Lower flammability limit: 8%
10. STABILITY AND REACTIVITY

Reactivity Not applicable
Chemical stability Stable under recommended storage conditions.
Possibility of Hazardous Reactions None under normal processing.
Hazardous polymerization No information available.
Conditions to avoid Exposure to air or moisture over prolonged periods.
Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents.
Hazardous Decomposition Products Thermal decomposition can lead to release of irritating and toxic gases and vapors. Carbon oxides. Phosgene.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation No data available.
Eye contact No data available.
Skin Contact No data available.
Ingestion No data available.

Information on toxicological effects
Symptoms No information available.
Delayed and immediate effects as well as chronic effects from short and long-term exposure
Chronic Toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.

Numerical measures of toxicity - Product Information
Unknown acute toxicity No information available
The following values are calculated based on chapter 3.1 of the GHS document
ATEmix (oral) 55 mg/kg
ATEmix (dermal) 250 mg/kg
ATEmix (inhalation-dust/mist) 0 mg/l
ATEmix (inhalation-vapor) 0.2 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity May cause long lasting harmful effects to aquatic life
Chloroacetic acid
79-11-8

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
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<td>Chloroacetic acid 79-11-8</td>
<td>0.2</td>
</tr>
</tbody>
</table>

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability: No information available.
Bioaccumulation: No information available.
Mobility: No information available.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Hazardous Waste Status</th>
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<tbody>
<tr>
<td>Chloroacetic acid 79-11-8</td>
<td>Toxic, Corrosive</td>
</tr>
</tbody>
</table>

### 13. DISPOSAL CONSIDERATIONS

- **Disposal of wastes**
  Disposal should be in accordance with applicable regional, national and local laws and regulations.

- **Contaminated packaging**
  Do not reuse container.

- **Other Information**
  Waste codes should be assigned by the user based on the application for which the product was used.

- **California Hazardous Waste Status**
  This product contains one or more substances that are listed with the State of California as a hazardous waste.

### 14. TRANSPORT INFORMATION

#### DOT
- **UN/ID no**
  UN1751
- **Hazard Class**
  6.1
- **Subsidiary class**
  8
- **Packing Group**
  II
- **Proper shipping name**
  Chloroacetic acid, solid
- **Description**
  UN1751, Chloroacetic acid, solid, 6.1 (8), II, POISON
- **Emergency Response Guide Number**
  153

#### IMDG
- **UN/ID no**
  UN1751
- **Hazard Class**
  6.1
- **Subsidiary hazard class**
  8
- **Packing Group**
  II
- **Proper shipping name**
  Chloroacetic acid, solid
- **Description**
  UN1751, Chloroacetic acid, solid, 6.1 (8), II
- **EmS-No**
  F-A, S-B

#### IATA
- **UN/ID no**
  UN1751
- **Hazard Class**
  6.1
- **Subsidiary hazard class**
  8
- **Packing Group**
  II
- **Proper shipping name**
  Chloroacetic acid, solid
- **Description**
  UN1751, Chloroacetic acid, solid, 6.1 (8), II
15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists:
- TSCA (United States)
- Canada (DSL/NDSL)
- Europe (EINECS/ELINCS/NLP)
- Australia (AICS)
- South Korea (KECL)
- China (IECSC)
- ENCS (Japan)
- Philippines (PICCS)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
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<td>X</td>
<td>X</td>
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<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
</tbody>
</table>

- Listed

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

- Acute health hazard: Yes
- Chronic Health Hazard: Yes
- Fire hazard: No
- Sudden release of pressure hazard: No
- Reactive hazard: No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
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<tbody>
<tr>
<td>Chloroacetic acid 79-11-8</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tbody>
</table>

16. OTHER INFORMATION

Revision note
No information available

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Santa Cruz Biotechnology, Inc.  www.scbt.com
End of Safety Data Sheet