Section I - Product Identification
An aqueous solution of trichloroacetic acid.

Section II - Hazards Identification
Overview: Trichloroacetic acid is corrosive and a strong denaturer of proteins. Even brief contact will cause severe burns and/or ulceration of skin and eyes.

Safety Ratings

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
<th>Contact</th>
<th>Recommended safety equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe</td>
<td>None</td>
<td>Reactive</td>
<td>Hazardous</td>
<td>safety goggles, lab coat and proper gloves</td>
</tr>
</tbody>
</table>

Storage: General storage

NFPA Ratings
Health = 3  Flammability = 0  Reactivity = 1

Potential Health Effects
Trichloroacetic acid is a strong acid that will cause tissue damage and severe ulcers on contact with skin or eyes.

Inhalation: Extremely corrosive to mucous membranes and other structures in the respiratory tract. Will cause pulmonary edema.

Ingestion: Can cause severe burns to mouth, esophagus and stomach. Also causes nausea, vomiting, diarrhea, etc.

Skin contact: Can cause burns and ulceration.

Eye contact: Even brief contact can cause severe damage.

Chronic Exposure: Unknown
Aggravation of preexisting conditions: Will aggravate preexisting skin conditions.

Section III - Composition/Information on Components

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS#</th>
<th>OSHA Pel</th>
<th>ACGIH TLV</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroacetic</td>
<td>76-03-9</td>
<td>1 mg/m3 TWA</td>
<td>1 mg/m3 TWA</td>
<td>30% w/v</td>
</tr>
</tbody>
</table>

Section IV - First Aid Measures
Inhalation: Because of the low vapor pressure, inhalation is unlikely to be a problem with this product. In case of difficulty, remove from source of exposure and get immediate medical attention. Be prepared to assist breathing.

Ingestion: Do not induce vomiting. If the victim is conscious administer large quantities of water. Never give anything by mouth to an unconscious person.

Skin Contact: Wash affected area with soap and water. Get medical advice.

Eye Contact: Rinse thoroughly with running water. Get immediate medical attention.
Section V - Fire Fighting Measures

Flash point: Not applicable.
Flammable Limits: Not applicable.
Fire: Not normally a fire hazard.
Explosion: Not normally an explosion hazard.
Fire Extinguishing Media: Any means suitable for surrounding fire.
Special information: Pyrolysis will release corrosive fumes.

Section VI - Accidental Release Measures

Absorb with a suitable absorbent and store in a suitable container for disposal.

Section VII - Handling and Storage

Store in a closed container, protected from freezing.

Section VIII - Exposure Control/Personal Protection

Airborne Exposure Limits: See section III.
Personal Respirator: Usually not required. In case of emergency, or when exposure levels are unknown, use a positive pressure, full face piece, air supplied respirator.
Skin protection: Protective gloves are recommended as part of good laboratory practice.
Eye Protection: Laboratory safety goggles or similar products are recommended as part of good laboratory practice.

Section IX - Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>102 °C</td>
</tr>
<tr>
<td>Density</td>
<td>1.14 g/ml</td>
</tr>
<tr>
<td>Vapor pressure (mm Hg)</td>
<td>18 @ 20 °C</td>
</tr>
<tr>
<td>Evaporation Rate (water = 1)</td>
<td>1</td>
</tr>
<tr>
<td>Vapor Density (air = 1)</td>
<td>0.6</td>
</tr>
<tr>
<td>Solubility</td>
<td>Infinitely miscible with water</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>A clear, colorless liquid. The solution will darken somewhat as it ages.</td>
</tr>
</tbody>
</table>

Section X - Stability and Reactivity

Stability: Freezes at low temperature.
Hazardous Decomposition Products: Nothing unusual.
Hazardous polymerization: Will not occur.
Incompatibilities: Nothing unusual.
Conditions to avoid: Excessive cold/heat and light.

Section XI - Toxicological Information

Extremely corrosive.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Known Carcinogenicity?</th>
<th>Anticipated?</th>
<th>IARC Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroacetic Acid</td>
<td>No</td>
<td>No</td>
<td>3</td>
</tr>
</tbody>
</table>

Section XII - Ecological Information

Environmental Fate: Biodegradable.
Environmental Toxicity: Not likely to be toxic to marine life after neutralization.
Section XIII - Disposal Considerations

Local governments usually restrict the amounts of strong acids that may be flushed down the drain. Typically the pH of the sewage outflow from a building is restricted to Between 4 and 10. Also, strong acids will corrode metal plumbing. Strong acids may usually be neutralized with base by qualified individuals before flushing down the drain. Dispose of contents and container in accordance with all government regulations.

Section XIV - Transportation Information

DOT Shipping name: Trichloroacetic Acid Solution  
Hazard Class: 8  
Packing Group: II

DOT Hazard Label: Corrosive  
DOT Identification Number: UN2564

Bottles smaller than 32 Fl. Oz. are eligible to be shipped under ORM-D or limited quantity exemptions [49 CFR section 173.154(b) and 173.154(C)].

Section XV - Regulatory Information

Chemical Inventory Status

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>TSCA</th>
<th>EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroacetic Acid</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Federal, State and International Regulations

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>SARA 302 RQ</th>
<th>SARA 313 TPQ</th>
<th>SARA 313 List</th>
<th>SARA 313 Category</th>
<th>RCRA 261.33</th>
<th>TSCA 8(D)</th>
<th>Ca. Prop 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroacetic Acid</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Chemical Weapons Convention: No, TSCA 12(b): No, CDTA: No

SARA 311/312: Acute: Yes, Chronic: Yes, Fire: No

Section XVI - Other Information

This information is believed to be correct but is not waranteed as such, nor does it purport to be all inclusive.

Revision Date: Jan. 12, 2018