1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Trichloroacetic acid
Product Number: 522082
Brand: Sigma-Aldrich
Company: Sigma-Aldrich
Telephone: +1 800-325-5832
Fax: +1 800-325-5052
Emergency Phone #: (314) 778-5555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: TCA
Formula: C2HCl3O2
Molecular Weight: 183.39 g/mol
CAS-No.: 76-03-9
EC-No.: 200-927-2
Index-No.: 807-064-00.7

3. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards
Delayed target organ effects
Severe eye irritant
Corrosive
Target Organ
Central nervous system

HMIS Classification
Health Hazard: 3
Chronic Health Hazard: *
Flammability: 1
Physical hazards: 0

NFPA Rating
Health Hazard: 3
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

4. FIRST AID MEASURES

Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin: May be harmful if absorbed through skin. Causes skin burns.
Eyes: Causes eye burns.
Ingestion: May be harmful if swallowed. Causes burns.

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If Inhaled: If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.
In case of skin contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.
In case of eye contact: Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties
Flash point: 113 °C (235 °F) - closed cup
Ignition temperature: No data available

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Discharge into the environment must be avoided. Do not let product enter drains.

Methods for cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Storage
Keep container tightly closed in a dry and well-ventilated place. Store under nitrogen.

hygroscopic:

(8/25/2009)
### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Components with workplace control parameters**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroacetic acid</td>
<td>79-03-9</td>
<td></td>
<td>TWA 1 ppm 6.7 mg/m³</td>
<td>1996-03-01</td>
<td>US, American Conference of Governmental and Industrial Hygienists; Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004; Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)</td>
</tr>
</tbody>
</table>

**Remarks**
1996 Adoption
Refers to Appendix A - Carcinogens.

**TWA** 1 ppm 7 mg/m³ 1999-03-31
US, Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A

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### Personal protective equipment

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face particulate respirator type N100 (US) or type P8 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**
Handle with gloves.

**Eye protection**
Safety glasses

**Skin and body protection**
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**Hygiene measures**
Handle in accordance with good Industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
- Form: liquid
- Colour: white

**Safety data**
- pH: 1 at 81.7 g/l at 25 °C (77 °F)
- Melting point: 54 °C (129 °F)
- Boiling point: 155 °C (309 °F) at 1.013 hPa (760 mmHg)

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### 10. STABILITY AND REACTIVITY

**Storage stability**
Stable under recommended storage conditions.

**Conditions to avoid**
Exposure to moisture and Heat.

**Materials to avoid**
Strong oxidizing agents, Strong bases, Amines

**Hazardous decomposition products**
Trichloroacetic acid decomposes above 200 °C forming HCl, CO and Phosgene.

**Hazardous decomposition products formed under fire conditions.**
Carbon oxides, Hydrogen chloride gas

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### 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**
LD50 Oral: rat - 3,320 mg/kg

**Irritation and corrosion**
Eyes - rabbit: Severe eye irritation - 5 s

**Sensitisation**
no data available

**Chronic exposure**
This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

**Potential Health Effects**

- **Inhalation**
  May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

- **Skin**
  May be harmful if absorbed through skin. Causes skin burns.

- **Eyes**
  Causes eye burns.

- **Ingestion**
  May be harmful if swallowed. Causes burns.

**Target Organs**
Central nervous system,
12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability

Ecotoxicity effects

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 2,000 mg/l - 96 h
Toxicity to daphnia EC50 - Daphnia magna (Water flea) - 1,460 - 2,000 mg/l - 48 h
and other aquatic invertebrates.

Further information on ecology

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. No data available.

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 1839 Class: 8
Proper shipping name: Trichloroacetic acid

IMDG

UN-Number: 1839 Class: 8 Packaging group: II
EMS-No: F-A, S-B
Proper shipping name: TRICHLOROACETIC ACID, SOLID

IATA

UN-Number: 1839 Class: 8 Packaging group: II
Proper shipping name: Trichloroacetic acid

15. REGULATORY INFORMATION

OSHA Hazards
Delayed target organ effects, Severe eye irritant, Corrosive

TSCA Status
On TSCA Inventory

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

16. OTHER INFORMATION

Further information

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