SIGMA-ALDRICH

Material Safety Data Sheet

Version 3.0
Revision Date 08/21/2009
Print Date 07/27/2010

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Chloroacetic acid

Product Number : C19627
Brand : Sigma-Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +18003255832
Fax : +18003255052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Monochloroacetic acid

Formula : $C_2H_3ClO_2$
Molecular Weight : 94.50 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Chloroacetic acid			
79-11-8	201-178-4	607-003-00-1	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect, Toxic by ingestion, Corrosive

Target Organs

Central nervous system, Heart, Skeletal muscle., Kidney

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

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	Toxic if swallowed. Causes burns.

4. FIRST AID MEASURES

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	126 °C (259 °F) - closed cup
Ignition temperature	470 °C (878 °F)

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. Do not let product enter drains. Discharge into the environment must be avoided.

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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Chloroacetic acid	79-11-8	TWA	0.5 ppm	2005-12-09	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Skin contact does contribute to exposure. Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories. Inhalable fraction and vapor. Because the estimated saturated vapor concentration may significantly contribute to the exposure at the TLV-TWA and evaporative losses of collected particulate matter may occur during sampling, both the particulate mass and vapor phase concentrations should be considered and summed to determine total airborne concentration.				

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (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. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (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. 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
Face shield and 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
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	crystalline
Colour	white

Safety data

pH	< 1.0 at 800 g/l at 20 °C (68 °F)
Melting point	60 - 63 °C (140 - 145 °F) - lit.
Boiling point	189 °C (372 °F) - lit.
Flash point	126 °C (259 °F) - closed cup

Ignition temperature	470 °C (878 °F)
Lower explosion limit	8 %(V)
Vapour pressure	ca.2 hPa (2 mmHg) at 50 °C (122 °F) ca.0.2 hPa (0.2 mmHg) at 20 °C (68 °F)
Water solubility	soluble
Partition coefficient: n-octanol/water	log Pow: 0.2

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong oxidizing agents, Strong bases, Strong reducing agents

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

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 55 mg/kg

LC50 Inhalation - rat - 180 mg/m3

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

Carcinogenicity - mouse - Subcutaneous
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Lungs, Thorax, or Respiration:Tumors. Liver:Tumors.

Carcinogenicity - mouse - Subcutaneous
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Tumorigenic:Tumors at site or application.

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Genotoxicity in vitro - mouse - lymphocyte
Mutation in microorganisms

Genotoxicity in vitro - mouse - lymphocyte
Mutation in mammalian somatic cells.

Genotoxicity in vitro - Hamster - ovary
Sister chromatid exchange

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

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	Toxic if swallowed. Causes burns.
Target Organs	Central nervous system, Heart, Skeletal muscle., Kidney,

Additional Information
RTECS: AF8575000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish	LC50 - Poecilia reticulata (guppy) - 369 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 71 - 85 mg/l - 48 h
Toxicity to algae	EC50 - Scenedesmus subspicatus - 28 - 70 mg/l - 48 h

Further information on ecology

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms.

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: 1751 Class: 6.1 (8) Packing group: II
Proper shipping name: Chloroacetic acid, solid
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 1751 Class: 6.1 (8) Packing group: II EMS-No: F-A, S-B
Proper shipping name: CHLOROACETIC ACID, SOLID
Marine pollutant: No

IATA

UN-Number: 1751 Class: 6.1 (8) Packing group: II
Proper shipping name: Chloroacetic acid, solid

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect, Toxic by ingestion, Corrosive

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

SARA 302 Components

	CAS-No.	Revision Date
Chloroacetic acid	79-11-8	1991-07-01

SARA 313 Components

	CAS-No.	Revision Date
Chloroacetic acid	79-11-8	1991-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Chloroacetic acid	79-11-8	1991-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Chloroacetic acid	79-11-8	1991-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Chloroacetic acid	79-11-8	1991-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.