

## Material Safety Data Sheet

Date Printed: 14/DEC/2004

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Version 1.3

According to 91/155/EEC

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1 - Product and Company Information

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Product Name	CHLOROACETIC ACID, 99+%, A.C.S. REAGENT
Product Number	402923
Company	Sigma-Aldrich Pte Ltd #08-01 Citilink Warehouse Singapore 118529 Singapore
Technical Phone #	65 271 1089
Fax	65 271 1571

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2 - Composition/Information on Ingredients

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Product Name	CAS #	EC no	Annex I Index Number
CHLOROACETIC ACID	79-11-8	201-178-4	607-003-00-1

  

Formula	C2H3ClO2
Molecular Weight	94.5 AMU
Synonyms	Acide chloracetique (French) * Acide monochloracetique (French) * Acidomonocloroacetico (Italian) * Chloracetic acid * Chloroacetic acid * alpha-Chloroacetic acid * Chloroethanoic acid * Kyselina chloroctova (Czech) * MCA * Monochloorazijnzuur (Dutch) * Monochloracetic acid * Monochloressigsaeure (German) * Monochloroacetic acid * Monochloroethanoic acid * NCI-C60231

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3 - Hazards Identification

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## SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Toxic if swallowed. Causes burns. Very toxic to aquatic organisms.

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4 - First Aid Measures

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## AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give  
artificial respiration. If breathing is difficult, give oxygen.

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5 - Fire Fighting Measures

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## EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate  
foam.

## SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

## SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing

to prevent contact with skin and eyes.

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## 6 - Accidental Release Measures

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### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust.

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## 7 - Handling and Storage

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### HANDLING

Directions for Safe Handling: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

### STORAGE

Conditions of Storage: Keep tightly closed. Store in a cool dry place.

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## 8 - Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

### EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	2 MG/M3
Poland		NDSch	4 MG/M3
Poland		NDSP	-

### EXPOSURE LIMITS - GERMANY

Source	Type	Value
TRGS 900	OEL	4 mg/m3 1 ppm

Remarks: =1=

Remarks: H,ARW

### EXPOSURE LIMITS - SWEDEN

Source	Type	Value
	LLV (Level)	4 mg/m3 1 ppm

Remarks: H

### EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	OEL	1.2 mg/m3 0.3 ppm

### PERSONAL PROTECTIVE EQUIPMENT

Special Protective Measures: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

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## 9 - Physical and Chemical Properties

Appearance	Color: White Form: Fine crystals	
Property	Value	At Temperature or Pressure
pH	< 1	20 °C Concentration: 800 g/l
BP/BP Range	189 °C	760 mmHg
MP/MP Range	60 °C	
Flash Point	126 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	> 500 °C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower: 8 %	
Vapor Pressure	0.75 mmHg	20 °C
SG/Density	N/A	
Partition Coefficient	Log Kow: 0.2	
Viscosity	1.29 Pas	100 °C
Vapor Density	3.26 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	750 - 850 kg/l	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	1.29 mN/m	100 °C
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:Soluble.	

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## 10 - Stability and Reactivity

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### STABILITY

Materials to Avoid: Strong oxidizing agents, Strong bases, Strong reducing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

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## 11 - Toxicological Information

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RTECS NUMBER: AF8575000

### ACUTE TOXICITY

LD50  
Oral  
Rat  
55 mg/kg

LC50  
Inhalation  
Rat  
180 mg/m3

LD50  
Intraperitoneal  
Rat  
16600 UG/KG

LD50  
Subcutaneous  
Rat  
5 MG/KG

LD50  
Subcutaneous  
Mouse  
250 MG/KG

#### SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### ROUTE OF EXPOSURE

Multiple Routes: May be fatal if inhaled, swallowed, or absorbed through skin.

#### TARGET ORGAN INFORMATION

Central nervous system. Heart. Skeletal muscle. Kidneys.

#### CHRONIC EXPOSURE - CARCINOGEN

Mouse  
Route of Application: Subcutaneous  
Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Lungs, Thorax, or Respiration: Tumors. Liver: Tumors.

Mouse  
Route of Application: Subcutaneous  
Exposure Time: 65W  
Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Tumorigenic: Tumors at site or application.

#### CHRONIC EXPOSURE - MUTAGEN

Mouse  
548 MG/L (+S9)  
Cell Type: lymphocyte  
Mutation in microorganisms

Mouse  
400 MG/L  
Cell Type: lymphocyte  
Mutation in mammalian somatic cells.

Hamster  
160 MG/L  
Cell Type: ovary  
Sister chromatid exchange

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## 12 - Ecological Information

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### ECOTOXICOLOGICAL EFFECTS

Test Type: EC50 Algae  
Species: Scenedesmus subspicatus  
Time: 48 h  
Value: 28 - 70 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 48 h  
Value: 71 - 85 mg/l

Test Type: LC50 Fish  
Species: Poecilia reticulata  
Time: 96 h  
Value: 369 mg/l

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

Observe all federal, state, and local environmental regulations.

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## 14 - Transport Information

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### RID/ADR

UN#: 1751  
Class: 6.1  
PG: II  
Proper Shipping Name: Chloroacetic acid, solid

### IMDG

UN#: 1751  
Class: 6.1  
PG: II  
Subrisk: 8  
Proper Shipping Name: Chloroacetic acid, solid  
Marine Pollutant: No  
Severe Marine Pollutant: No

### IATA

UN#: 1751  
Class: 6.1  
PG: II  
Subrisk: 8  
Proper Shipping Name: Chloroacetic acid, solid  
Inhalation Packing Group I: No

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## 15 - Regulatory Information

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 607-003-00-1

INDICATION OF DANGER: T N

Toxic. Dangerous for the environment.

R-PHRASES: 25 34 50

Toxic if swallowed. Causes burns. Very toxic to aquatic organisms.

S-PHRASES: 23 37 45 61

Do not breathe vapor. Wear suitable gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets.

### COUNTRY SPECIFIC INFORMATION

Germany  
WGK: 2

SWITZERLAND  
SWISS POISON CLASS: 3

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## 16 - Other Information

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### WARRANTY

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 Inc., 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. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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