

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**
**Product Identifier**

Perihalan Produk: **Chloroacetic Acid (Certified)**  
 Product Description: **Chloroacetic Acid (Certified)**  
 Cat No. : A176-500  
 Synonyms MCA  
 CAS No 79-11-8  
 Molecular Formula C2 H3 Cl O2

**Relevant identified uses of the substance or mixture and uses advised against**

Recommended Use Laboratory chemicals.  
 Uses advised against No Information available

**Company**

Thermo Fisher Scientific Fisher Scientific (M) Sdn Bhd  
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 Selangor Darul Ehsan, Malaysia.  
 Main line: +60 3-5525 7888

**E-mail address**

Enquiry.my@thermofisher.com

**Emergency Telephone Number**

Tel: +03-5525 7888  
 CHEMTREC Malaysia **1-800-815-308** (Malay)  
 CHEMTREC Malaysia (Kuala Lumpur) **+(60)-327884561** (Malay)

**SECTION 2: HAZARDS IDENTIFICATION**
**Classification of the substance or mixture**

Substances/mixtures corrosive to metal	Category 1 (H290)
Acute oral toxicity	Category 3 (H301)
Acute dermal toxicity	Category 3 (H311)
Acute Inhalation Toxicity - Dusts and Mists	Category 3 (H331)
Skin Corrosion/Irritation	Category 1 B (H314)
Serious Eye Damage/Eye Irritation	Category 1 (H318)
Specific target organ toxicity - (single exposure)	Category 3 (H335)
Acute aquatic toxicity	Category 1 (H400)
Chronic aquatic toxicity	Category 1 (H410)

**Label Elements**

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**Signal Word**

**Danger**

## Hazard Statements

H290 - May be corrosive to metals  
H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled  
H314 - Causes severe skin burns and eye damage  
H335 - May cause respiratory irritation  
H410 - Very toxic to aquatic life with long lasting effects

## Precautionary Statements

### Prevention

P234 - Keep only in original packaging  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

### Response

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a POISON CENTER or doctor  
P330 - Rinse mouth  
P331 - Do NOT induce vomiting  
P390 - Absorb spillage to prevent material damage  
P362 + P364 - Take off contaminated clothing and wash it before reuse

### Storage

P406 - Store in corrosion resistant polypropylene container with a resistant liner  
P405 - Store locked up  
P402 - Store in a dry place  
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

### Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

## Other Hazards

Toxic to terrestrial vertebrates  
This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Chloroacetic acid	79-11-8	<=100

## SECTION 4: FIRST AID MEASURES

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## Description of first aid measures

### **General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

### **Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

### **Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

### **Ingestion**

Do NOT induce vomiting. Call a physician or poison control center immediately.

### **Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

### **Self-Protection of the First Aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

## Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

## Indication of any immediate medical attention and special treatment needed

### **Notes to Physician**

Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

### Extinguishing media

#### **Suitable Extinguishing Media**

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

#### **Extinguishing media which must not be used for safety reasons**

No information available.

### Special hazards arising from the substance or mixture

The product causes burns of eyes, skin and mucous membranes. Do not allow run-off from fire-fighting to enter drains or water courses.

### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Hydrogen chloride gas.

### Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as required. Evacuate personnel to safe areas. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid dust formation.

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## Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

## Methods and Material for Containment and Cleaning Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe Handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not ingest. If swallowed then seek immediate medical assistance. Do not breathe (dust, vapor, mist, gas). Avoid dust formation.

### Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Store under an inert atmosphere. Protect from moisture.

### Specific End Uses

Use in laboratories.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Component	Malaysia	ACGIH TLV	OSHA PEL
Chloroacetic acid		TWA: 0.5 ppm Skin	

Component	European Union	The United Kingdom	Germany
Chloroacetic acid		STEL: 0.9 ppm 15 min STEL: 3.6 mg/m <sup>3</sup> 15 min TWA: 0.3 ppm 8 hr TWA: 1.2 mg/m <sup>3</sup> 8 hr Skin	TWA: 0.5 ppm (8 Stunden). AGW - exposure factor 1 TWA: 2 mg/m <sup>3</sup> (8 Stunden). AGW - exposure factor 1 TWA: 0.5 ppm (8 Stunden). MAK can occur as vapor and aerosol at the same time TWA: 2 mg/m <sup>3</sup> (8 Stunden). MAK can occur as vapor and aerosol at the same time Höhepunkt: 1 ppm Höhepunkt: 4 mg/m <sup>3</sup>

### Exposure Controls

#### Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

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## Personal protective equipment

<b>Eye Protection</b>	Goggles
<b>Hand Protection</b>	Protective gloves
<b>Skin and body protection</b>	Long sleeved clothing

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.  
(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

<b>Respiratory Protection</b>	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators
<b>Recommended Filter type:</b>	Particulates filter conforming to EN 143 To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly When RPE is used a face piece Fit Test should be conducted

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice

**Environmental exposure controls** Prevent product from entering drains Do not allow material to contaminate ground water system Local authorities should be advised if significant spillages cannot be contained

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	White	
<b>Physical State</b>	Solid	
<b>Odor</b>	pungent	
<b>Odor Threshold</b>	No data available	
<b>pH</b>	< 1	(800 g/l @ 20°C)
<b>Melting Point/Range</b>	61 - 63 °C / 141.8 - 145.4 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	189 °C / 372.2 °F	
<b>Flash Point</b>	126 °C / 258.8 °F	<b>Method -</b> No information available
<b>Evaporation Rate</b>	Not applicable	Solid
<b>Flammability (solid,gas)</b>	No information available	
<b>Explosion Limits</b>	<b>Lower</b> 8 Vol%	
<b>Vapor Pressure</b>	0.75 mmHg (20°C)	
<b>Vapor Density</b>	Not applicable	Solid
<b>Specific Gravity / Density</b>	1.580	
<b>Bulk Density</b>	No data available	
<b>Water Solubility</b>	Soluble	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Component</b>	<b>log Pow</b>	

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Chloroacetic acid 0.49

Autoignition Temperature 470 °C / 878 °F  
Decomposition Temperature No data available  
Viscosity Not applicable Solid  
Explosive Properties No information available  
Oxidizing Properties No information available

Molecular Formula C2 H3 Cl O2  
Molecular Weight 94.5

## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

None known, based on information available.

### Chemical Stability

Hygroscopic.

### Possibility of Hazardous Reactions

Hazardous Polymerization Hazardous polymerization does not occur.  
Hazardous Reactions None under normal processing.

### Conditions to Avoid

Incompatible products. Excess heat. Avoid dust formation. Exposure to moist air or water.

### Incompatible Materials

Strong oxidizing agents. Strong bases. Strong reducing agents. Amines. Alcohols.

### Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen chloride gas.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

#### Product Information

(a) acute toxicity;  
Oral Category 3  
Dermal Category 3  
Inhalation Category 3

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Chloroacetic acid	LD50 = 55 mg/kg ( Rat )	LD50 = 250 mg/kg ( Rabbit )	LC50 = 180 mg/m <sup>3</sup> ( Rat ) 4 h

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(b) skin corrosion/irritation;	Category 1 B
(c) serious eye damage/irritation;	Category 1
(d) respiratory or skin sensitization; Respiratory Skin	Based on available data, the classification criteria are not met Based on available data, the classification criteria are not met
(e) germ cell mutagenicity;	Based on available data, the classification criteria are not met Not mutagenic in AMES Test
(f) carcinogenicity;	Based on available data, the classification criteria are not met There are no known carcinogenic chemicals in this product
(g) reproductive toxicity;	Based on available data, the classification criteria are not met
(h) STOT-single exposure; Results / Target organs	Category 3 Respiratory system.
(i) STOT-repeated exposure; Target Organs	Based on available data, the classification criteria are not met None known.
(j) aspiration hazard;	Not applicable Solid
Symptoms / effects, both acute and delayed	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

**Endocrine Disrupting Properties** Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

**Ecotoxicity effects** The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Chloroacetic acid	LC50: = 145 mg/L, 96h semi-static (Pimephales promelas)	EC50: 71 - 85 mg/L, 48h Static (Daphnia magna) EC50: = 77 mg/L, 48h (Daphnia magna)	EC50: = 1.8 mg/L, 72h (Pseudokirchneriella subcapitata) EC50: = 0.025 mg/L, 72h (Desmodesmus subspicatus)	

**Persistence and degradability**  
**Persistence** Persistence is unlikely.  
**Degradation in sewage** Contains substances known to be hazardous to the environment or not degradable in waste

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**treatment plant** water treatment plants.

**Bioaccumulative potential** Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Chloroacetic acid	0.49	No data available

**Mobility in soil** The product is water soluble, and may spread in water systems. . Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors

**Other adverse effects** No information available

## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

**Waste from Residues/Unused Products**

Should not be released into the environment Waste is classified as hazardous Dispose of in accordance with the European Directives on waste and hazardous waste Dispose of in accordance with local regulations

**Contaminated Packaging**

Dispose of this container to hazardous or special waste collection point.

**Other Information**

Do not flush to sewer Waste codes should be assigned by the user based on the application for which the product was used Do not empty into drains Large amounts will affect pH and harm aquatic organisms Solutions with low pH-value must be neutralized before discharge Do not let this chemical enter the environment

## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

UN-No UN1751  
Hazard Class 6.1  
Subsidiary Hazard Class 8  
Packing Group II  
Proper Shipping Name CHLOROACETIC ACID, SOLID

### Road and Rail Transport

UN-No UN1751  
Hazard Class 6.1  
Subsidiary Hazard Class 8  
Packing Group II  
Proper Shipping Name CHLOROACETIC ACID, SOLID

### IATA

UN-No UN1751  
Hazard Class 6.1  
Subsidiary Hazard Class 8  
Packing Group II  
Proper Shipping Name CHLOROACETIC ACID, SOLID

**Special Precautions for User** No special precautions required



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## SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories X = listed

Component	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	IECSC	AICS	KECL
Chloroacetic acid	201-178-4	X	X	X	X	X	X	X	KE-05492

### National Regulations

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

**Ozone Depletion Potential** This product does not contain any known or suspected substance

Component	Persistent Organic Pollutant	Ozone Depletion Potential	Pesticides Act 1974
Chloroacetic acid			X

## SECTION 16: OTHER INFORMATION

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**POW** - Partition coefficient Octanol:Water

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

### **Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadviser - LOLI, Merck index, RTECS

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Revision Summary SDS sections updated.

**In accordance with local and national regulations: Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013**

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## Disclaimer

The information provided in this 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

**End of Safety Data Sheet**