

Material Safety Data Sheet

Date Printed: 15/DEC/2004

Date Updated: 19/MAR/2004

Version 1.1

According to 91/155/EEC

1 - Product and Company Information

Product Name	PHENACYL CHLORIDE
Product Number	77460
Company	Sigma-Aldrich Pte Ltd #08-01 Citilink Warehouse Singapore 118529 Singapore
Technical Phone #	65 271 1089
Fax	65 271 1571

2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
2-CHLOROACETOPHENONE	532-27-4	208-531-1	None

Formula	C8H7ClO
Molecular Weight	154.6 AMU
Synonyms	Chemical mace * alpha-Chloroacetophenone * omega-Chloroacetophenone * 2-Chloroacetophenone * alpha-Chloroacetophenone (ACGIH:OSHA) * Chloromethyl phenyl ketone * 2-Chloro-1-phenylethanone * CN * Ethanone, 2-chloro-1-phenyl- * Mace (lacrimator) * NCI-C55107 * Phenacyl chloride * Phenylchloromethylketone

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Toxic if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact.

4 - First Aid Measures

AFTER INHALATION

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

AFTER EYE CONTACT

Contamination of the eyes should be treated by immediate and prolonged irrigation with copious amounts of water. Assure adequate flushing of the eyes by separating the eyelids with fingers.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

GENERAL INFORMATION

Contamination of the eyes should be treated by immediate and prolonged irrigation with copious amounts of water.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Carbon dioxide. Dry chemical powder.

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.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

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. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

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

SPECIAL REQUIREMENTS: Moisture sensitive.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

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

GENERAL HYGIENE MEASURES

Remove and wash contaminated clothing promptly. Wash thoroughly after handling.

EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	0.3 mg/m3
		0.05 ppm

EXPOSURE LIMITS - GERMANY

Source	Type	Value
TRGS 900	OEL	0.3 mg/m3

Remarks: NL

EXPOSURE LIMITS - NORWAY

Source	Type	Value
--------	------	-------

OEL	0.3 mg/m3
	0.05 ppm

EXPOSURE LIMITS - SWITZERLAND

Source	Type	Value
OEL	OEL	0.3 mg/m3
		0.05 ppm

EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	OEL	0.32 mg/m3
		0.05 ppm

PERSONAL PROTECTIVE EQUIPMENT

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

9 - Physical and Chemical Properties

Appearance	Color: Faintly beige
	Form: Crystals

Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	244 - 245 °C	760 mmHg
MP/MP Range	53 °C	
Flash Point	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	1.324 g/cm3	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

10 - Stability and Reactivity

STABILITY

Conditions of Instability: May decompose on exposure to moist air or water.

Materials to Avoid: Bases, Amines, Alcohols.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Hydrogen chloride gas.

11 - Toxicological Information

ACUTE TOXICITY

LCLO
Inhalation
Human
159 mg/m3
20M

LD50
Oral
Rat
50 mg/kg

LD50
Intraperitoneal
Rat
36 MG/KG
Remarks: Behavioral:Coma. Lungs, Thorax, or Respiration:Other changes. Skin and Appendages: Other: Hair.

LD50
Intravenous
Rat
41 MG/KG
Remarks: Behavioral:Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration:Respiratory stimulation. Kidney, Ureter, Bladder:Other changes.

LD50
Oral
Mouse
139 mg/kg

LC50
Inhalation
Mouse
59 mg/m3

LD50
Intraperitoneal
Mouse
60 MG/KG

LD50
Intravenous
Mouse
81 MG/KG
Remarks: Behavioral:Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration:Respiratory stimulation. Kidney, Ureter, Bladder:Other changes.

LD50
Oral
Rabbit
118 mg/kg
Remarks: Behavioral:Coma. Lungs, Thorax, or Respiration:Other changes. Skin and Appendages: Other: Hair.

LD50

Intravenous

Rabbit

30 MG/KG

Remarks: Behavioral:Convulsions or effect on seizure threshold.
Lungs, Thorax, or Respiration:Respiratory stimulation. Kidney,
Ureter, Bladder:Other changes.

LD50

Oral

Guinea pig

158 mg/kg

Remarks: Behavioral:Coma. Lungs, Thorax, or Respiration:Other
changes. Skin and Appendages: Other: Hair.

LD50

Intraperitoneal

Guinea pig

17 MG/KG

Remarks: Behavioral:Coma. Lungs, Thorax, or Respiration:Other
changes. Skin and Appendages: Other: Hair.

IRRITATION DATA

Skin

Rat

12 %

6H

Remarks: Open irritation test

Skin

Rabbit

5 mg

24H

Remarks: Mild irritation effect

Skin

Rabbit

12 %

6H

Remarks: Open irritation test

Eyes

Rabbit

1 mg

Remarks: Mild irritation effect

Eyes

Rabbit

3 mg

Remarks: Severe irritation effect

Skin

Guinea pig

12 %

6H

Remarks: Open irritation test

SENSITIZATION

Sensitization: May cause allergic respiratory and skin reactions

SIGNS AND SYMPTOMS OF EXPOSURE

Symptoms of exposure may include burning sensation, coughing,

wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

ROUTE OF EXPOSURE

Eye Contact: Severe lachrymator.

Multiple Routes: May be fatal if inhaled, swallowed, or absorbed through skin. High concentrations are extremely destructive to tissues of the mucous membranes and upper respiratory tract, eyes, and skin.

CHRONIC EXPOSURE - CARCINOGEN

Rat

Route of Application: Inhalation

Exposure Time: 6H/2Y-

Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Endocrine: Tumors. Skin and Appendages: Other: Tumors.

Mouse

Route of Application: Skin

Exposure Time: 27W

Result: Tumorigenic: Neoplastic by RTECS criteria. Skin and Appendages: Other: Tumors. Tumorigenic: Tumors at site or application.

CHRONIC EXPOSURE - MUTAGEN

Rat

10 UMOL/L

Cell Type: liver

DNA damage

Hamster

3 MG/L

Cell Type: ovary

Cytogenetic analysis

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

The material should be ignited in the presence of sodium carbonate and slaked lime (calcium hydroxide). The substance should be mixed with vermiculite and then with the dry caustics, wrapped in paper and burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 1693

Class: 6.1

PG: II

Proper Shipping Name: Tear gas substance, solid, n.o.s.

IMDG

UN#: 1697

Class: 6.1

PG: II
Proper Shipping Name: CHLOROACETOPHENONE, SOLID
Marine Pollutant: No
Severe Marine Pollutant: No

IATA

UN#: 1697
Class: 6.1
PG: II
Proper Shipping Name: CHLOROACETOPHENONE, SOLID
Inhalation Packing Group I: No

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: T

Toxic.

R-PHRASES: 25 36/37/38 42/43

Toxic if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact.

S-PHRASES: 22 26 36/37/39 45

Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SWITZERLAND

SWISS POISON CLASS: 1

16 - Other Information

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.

DISCLAIMER

For R&D use only. Not for drug, household or other uses.