

## Material Safety Data Sheet

Version 5.4

Revision Date 06/12/2013

Print Date 01/05/2014

---

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 4-Chlorophenol

Product Number : 185787

Brand : Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

---

2. HAZARDS IDENTIFICATION

## Emergency Overview

## OSHA Hazards

Toxic by inhalation., Harmful by ingestion., Harmful by skin absorption.

## Other hazards which do not result in classification

Stench.

## GHS Classification

Acute toxicity, Oral (Category 4)

Acute toxicity, Inhalation (Category 4)

Acute toxicity, Dermal (Category 4)

Acute aquatic toxicity (Category 2)

## GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H302 + H312 + H332

Harmful if swallowed, in contact with skin or if inhaled

H401

Toxic to aquatic life.

Precautionary statement(s)

P280

Wear protective gloves/ protective clothing.

## HMIS Classification

Health hazard: 2

Chronic Health Hazard: \*

Flammability: 1

Physical hazards: 0

## NFPA Rating

Health hazard: 2

Fire: 1

**Reactivity Hazard:** 0

**Potential Health Effects**

<b>Inhalation</b>	Toxic if inhaled. May cause respiratory tract irritation.
<b>Skin</b>	Harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.
<b>Ingestion</b>	Harmful if swallowed.

---

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : C<sub>6</sub>H<sub>5</sub>ClO  
Molecular Weight : 128.56 g/mol

Component		Concentration
<b>4-Chlorophenol</b>		
CAS-No.	106-48-9	90 100 %
EC-No.	203-402-6	
Index-No.	604-008-00-0	

---

**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**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

---

**5. FIREFIGHTING MEASURES**

**Conditions of flammability**

Not flammable or combustible.

**Suitable extinguishing media**

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

**Special protective equipment for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**

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

---

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

**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 and materials for containment and cleaning up**

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

---

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.  
Provide appropriate exhaust ventilation at places where dust is formed.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

Store under inert gas. Stench.

---

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Contains no substances with occupational exposure limit values.

**Personal protective equipment****Respiratory protection**

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 30 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Eye protection**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

---

**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form solid

Colour no data available

**Safety data**

pH no data available

Melting point/freezing point no data available

Boiling point	220 °C (428 °F) - lit.
Flash point	121 °C (250 °F) - closed cup
Ignition temperature	no data available
Auto-ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	1 hPa (1 mmHg) at 49.8 °C (121.6 °F)
Density	1.306 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 2.39 log Pow: 5
Relative vapour density	no data available
Odour	Stench.
Odour Threshold	no data available
Evaporation rate	no data available

---

## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

no data available

### Conditions to avoid

no data available

### Materials to avoid

Acid chlorides, Acid anhydrides, Oxidizing agents

### Hazardous decomposition products

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

Other decomposition products - no data available

---

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

LD50 Oral - rat - 670 mg/kg

#### Inhalation LC50

LC50 Inhalation - rat - 11 mg/m3

#### Dermal LD50

LD50 Dermal - rat - 1,500 mg/kg

Remarks: Behavioral: Muscle contraction or spasticity. Extremely corrosive and destructive to tissue.

#### Other information on acute toxicity

no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/eye irritation

no data available

**Respiratory or skin sensitisation**

no data available

**Germ cell mutagenicity**

Genotoxicity in vivo - rat - Oral

Cytogenetic analysis

**Carcinogenicity**

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Phenol)

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.

**Reproductive toxicity**

Reproductive toxicity - mouse - Inhalation

Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Effects on Fertility:

Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or

Fetus: Fetal death.

no data available

**Teratogenicity**

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	Toxic if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Skin</b>	Harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

**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

**Synergistic effects**

no data available

**Additional Information**

RTECS: SK2800000

---

**12. ECOLOGICAL INFORMATION****Toxicity**

Toxicity to fish	mortality NOEC - Cyprinodon variegatus (sheepshead minnow) - 3.2 mg/l - 96.0 h LC50 - Lepomis macrochirus (Bluegill) - 3.1 - 4.8 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	mortality NOEC - Daphnia - 0.2 mg/l - 8 d  EC50 - Daphnia magna (Water flea) - 2.8 - 8.6 mg/l - 24 h

**Persistence and degradability****Bioaccumulative potential**

Bioaccumulation      Cyprinus carpio (Carp) - 42 d  
Bioconcentration factor (BCF): 11 - 52

Cyprinus carpio (Carp) - 42 d  
Bioconcentration factor (BCF): 6.0 - 18.0

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

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

Toxic to aquatic life.

---

**13. DISPOSAL CONSIDERATIONS**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

---

**14. TRANSPORT INFORMATION**

**DOT (US)**

UN number: 2020    Class: 6.1    Packing group: III  
Proper shipping name: Chlorophenols, solid  
Reportable Quantity (RQ):  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 2020    Class: 6.1    Packing group: III    EMS-No: F-A, S-A  
Proper shipping name: CHLOROPHENOLS, SOLID  
Marine pollutant: No

**IATA**

UN number: 2020    Class: 6.1    Packing group: III  
Proper shipping name: Chlorophenols, solid

---

**15. REGULATORY INFORMATION**

**OSHA Hazards**

Toxic by inhalation., Harmful by ingestion., Harmful by skin absorption.

**SARA 302 Components**

The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Phenol	108-95-2	2007-07-01

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
4-Chlorophenol	106-48-9	1993-04-24

**SARA 311/312 Hazards**

Acute Health Hazard

**Massachusetts Right To Know Components**

CAS-No.	Revision Date
---------	---------------

4-Chlorophenol  
Phenol

106-48-9  
108-95-2

1993-04-24  
2007-07-01

**Pennsylvania Right To Know Components**

4-Chlorophenol  
Phenol

CAS-No.  
106-48-9  
108-95-2

Revision Date  
1993-04-24  
2007-07-01

**New Jersey Right To Know Components**

4-Chlorophenol  
Phenol

CAS-No.  
106-48-9  
108-95-2

Revision Date  
1993-04-24  
2007-07-01

**California Prop. 65 Components**

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

---

**16. OTHER INFORMATION**

**Further information**

Copyright 2013 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.  
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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

---