

Chemical Safety Data Sheet MSDS / SDS

4-chloro-o-cresol SDS

Revision Date:2024-04-25 Revision Number:1

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product name: 4-chloro-o-cresol
CAS: 1570-64-5

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.
Uses advised against: none

Company Identification

Company: Chemicalbook.in
Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090
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SECTION 2: Hazards identification**Classification of the substance or mixture**

Skin corrosion, Sub-category 1A
Acute toxicity - Category 3, Inhalation

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H314 Causes severe skin burns and eye damage

H331 Toxic if inhaled

H400 Very toxic to aquatic life

Precautionary statement(s)

Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash ... thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

Response

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P363 Wash contaminated clothing before reuse.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P316 Get emergency medical help immediately.

P321 Specific treatment (see ... on this label).

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

P391 Collect spillage.

Storage

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	4-chloro-o-cresol
Common names and synonyms:	4-chloro-o-cresol
CAS number:	1570-64-5
EC number:	216-381-3
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Give one or two glasses of water to drink. Do NOT induce vomiting. Refer for medical attention .

Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound may include irritation of the skin, eyes and mucous membranes.
ACUTE/CHRONIC HAZARDS: When heated to decomposition this compound emits toxic fumes. It can cause irritation of the skin, eyes and mucous membranes. (NTP, 1992)

Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilation if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Administer activated charcoal . Do not use emetics. Cover skin burns with dry, sterile dressings after decontamination . Maintain body temperature. Phenols and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. (NTP, 1992)

Specific hazards arising from the chemical

This chemical is probably combustible. (NTP, 1992)

Special protective actions for fire-fighters

Use water spray, foam, dry powder, carbon dioxide.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Do NOT let this chemical enter the environment.

Environmental precautions

Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Do NOT let this chemical enter the

environment.

Methods and materials for containment and cleaning up

Gamma-ray-induced degradation on nonbiodegradable organic compounds is demonstrated on chlorophenols and 4-chlorocresol. The oxidation in aqueous solutions with air at doses up to 1 Mrad results in complete dechlorination. The following organic compounds have been identified in the case of 4-chlorocresol as oxidation products: oxalic acid, formic acid (HCO₂H), acetic acid (HOAC), glyoxal, mesoxalic acid, mesoxalic acid semialdehyde.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Solid. Crystalline.
Colour:	Munsell Colour 5 Y 8/1 White.
Odour:	Mild, phenolic odor
Melting point/freezing point:	$\geq 46 - \leq 50$ °C.; $\geq 319 - \leq 49.85$ °C.
Boiling point or initial boiling point and boiling range:	Ca. 231 °C. Atm. press.:Ca. 1 atm. Remarks:No decomposition temperature recorded.
Flammability:	Combustible.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	Ca. 114.6 °C. Atm. press.:Ca. 760 mm Hg.
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available

pH:	no data available
Kinematic viscosity:	no data available
Solubility:	less than 1 mg/mL at 59° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = Ca. 3.09.
Vapour pressure:	26.66 Pa. Temperature:25 °C. Remarks:See additional information below.
Density and/or relative density:	Ca. 0.48 g/cm ³ . Temperature:20 °C.
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on burning. This produces toxic and corrosive fumes.

Chemical stability

no data available

Possibility of hazardous reactions

P-CHLORO-O-CRESOL can react vigorously with concentrated sodium hydroxide solutions. Also reacts with other bases, acid chlorides, acid anhydrides, and oxidizing agents. Corrodes steel, brass, copper and copper alloys [NTP, 1992]. A large quantity left in contact with concentrated sodium hydroxide solution for 3 days reacted violently, attaining red heat and evolving fumes that ignited explosively. The heat of reaction dissipated poorly because of the high viscosity of the mixture [Quart. Safety Summ., 1957, 28, 39].

Conditions to avoid

no data available

Incompatible materials

A large quantity (700 kg) of /4-chloro-2-methylphenol/, left in contact with concentrated sodium hydroxide soln for 3 days, decomposed, attaining red heat and evolving fumes which ignited explosively. Although this could not be reproduced under laboratory conditions, it is believed that exothermic hydrolysis to the hydroquinone (possibly with subsequent aerobic oxidation to the quinone) occurred, the high viscosity of the liquid preventing dissipation of heat.

Hazardous decomposition products

When heated to decomp it emits toxic fumes of /hydrogen chloride/ and phosgene.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 - rat (male/female) - ca. 3 195 mg/kg bw. Remarks: Range 2,698 -3,834 mg/kg.

Inhalation: LC50 - rat (male/female) - ca. 0.9 mg/L air (nominal).

Dermal: LD50 - rat (male/female) - ca. 2 240 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is corrosive to the eyes, skin and respiratory tract. Inhalation may cause lung oedema. See Notes. Corrosive on ingestion.

STOT-repeated exposure

no data available

Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - 1 mg/L - 48 h.

Toxicity to algae: EC50 - *Desmodesmus subspicatus* (previous name: *Scenedesmus subspicatus*) - ca. 14.81 mg/L - 72 h.

Toxicity to microorganisms: EC10 - *Pseudomonas putida* - ca. 37 mg/L - 17 h.

Persistence and degradability

AEROBIC: Degradation rates for 4-chloro-2-methylphenol were 2.8 ug/l/day at an initial concentration of 18 ug/l in a sea water shake flask die-away test and 0.04 ug/l/day at an initial concentration of 3.6 ug/l in a waste water shake flask die-away test(1). Mixed cultures of phenol adapted microorganisms exhibited moderate oxygen uptake as the test concentration of 4-chloro-2-methylphenol was reduced from 80 ppm to 50 ppm over a 3 hour period(2,3). 4-Chloro-2-methylphenol, present at 100 mg/l, reached 0 percent of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/l and the Japanese MITI test(4). An activated sludge pilot plant was operated at 4, 6, and 9 day sludge ages with the same influent settled sewage; higher concentrations of 4-chloro-2-methylphenol were seen in the effluent from the unit run at 4 day sludge age(5). A sludge-soil column study was able to demonstrate the breakdown of 4-chloro-2-methylphenol at an initial concentration of 304 mg/kg to 20 mg/kg after 97 days with successive first order rate constants of 0.0489 for the first 15 days and 0.0406 for the remaining 82 days, which

equates to a half-life of 14 days(6). 4-Chloro-2-methylphenol was almost completely degraded from 2 natural soils treated at 10 ppm within an 8 week incubation period at 25 deg C, while nearly a 90 percent reduction occurred after 4 weeks time(7). At a concentration of 200 and 2000 ppm, 12 weeks were required to achieve an approximate 95 percent reduction of initial substrate(7). 4-Chloro-2-methylphenol was degraded similarly in sandy clay and silty clay soils(8). Half-lives were 21 days in both types of soil at initial concentrations of 10 and 1000 ppm each(8). The first order rate constant for the degradation of 4-chloro-2-methylphenol was 0.0337 in sandy clay soil and 0.0334 in silty clay soil(8).

Bioaccumulative potential

Bioconcentration tests on carp with an average lipid content of 4.9 percent were conducted in a continuous flow system with six weeks exposure(1). BCF values in carp measured at initial 4-chloro-2-methylphenol concentrations of 2 ug/l and 20 ug/l ranged from 6.4-14 and 8.2-28, respectively(1). According to a classification scheme(2), these BCF ranges suggest the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

The Koc values for 4-chloro-2-methylphenol range from 124 to 645(1). According to a classification scheme(2), these Koc values suggest that 4-chloro-2-methylphenol is expected to have moderate mobility in soil.

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN3437 (For reference only, please check.)

IMDG: UN3437 (For reference only, please check.)

IATA: UN3437 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: CHLOROCRESOLS, SOLID (For reference only, please check.)

IMDG: CHLOROCRESOLS, SOLID (For reference only, please check.)

IATA: CHLOROCRESOLS, SOLID (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)

IMDG: 6.1 (For reference only, please check.)

IATA: 6.1 (For reference only, please check.)

Packing group, if applicable

ADR/RID: II (For reference only, please check.)

IMDG: II (For reference only, please check.)

IATA: II (For reference only, please check.)

Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:
<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Substance may be transported in a molten form.

Disclaimer: 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. We as supplier shall not be held liable for any