

## Chemical Safety Data Sheet MSDS / SDS

**2,3,4-TRICHLOROPHENOL**Revision Date:2025-02-01 Revision Number:1

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

Product name : 2,3,4-TRICHLOROPHENOL  
CBnumber : CB2666967  
CAS : 15950-66-0  
EINECS Number : 240-083-2  
Synonyms : 2,3,4-Trichlorophenol,2,3,4-Trichlorophenol 99%

**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  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

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**SECTION 2: Hazards identification****Classification of the substance or mixture**

Acute toxicity - Category 4, Oral  
Skin irritation, Category 2  
Serious eye damage, Category 1  
Specific target organ toxicity – single exposure, Category 3

**Label elements****Pictogram(s)**

Signal word : Danger

**Hazard statement(s)**

H225 Highly Flammable liquid and vapour  
H302 Harmful if swallowed  
H315 Causes skin irritation  
H318 Causes serious eye damage  
H335 May cause respiratory irritation

H370 Causes damage to organs

#### **Precautionary statement(s)**

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

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

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

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

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

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

#### **Prevention**

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

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.

#### **Response**

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

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

P332+P317 If skin irritation occurs: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P317 Get medical help.

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

P319 Get medical help if you feel unwell.

#### **Storage**

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

P405 Store locked up.

#### **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**

no data available

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## SECTION 3: Composition/information on ingredients

#### **Substance**

Product name : 2,3,4-TRICHLOROPHENOL

Synonyms : 2,3,4-Trichlorophenol, 2,3,4-Trichlorophenol 99%

CAS	: 15950-66-0
EC number	: 240-083-2
MF	: C6H3Cl3O
MW	: 197.45

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## SECTION 4: First aid measures

### Description of first aid measures

#### If inhaled

Fresh air, rest. Refer for medical attention.

#### Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

#### Following eye contact

Rinse with plenty of water (remove contact lenses if easily possible).

#### Following ingestion

Refer for medical attention .

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

Dust may cause swelling of eyes and eye injury, irritation of nose and throat. Solid irritates skin on prolonged contact. (USCG, 1999)

SYMPTOMS: Symptoms of exposure to this type of compound include irritation of the nose and pharynx. It can produce redness, edema and chemical burns on skin contact. In the eyes it induces conjunctival irritation, corneal injury and iritis. Symptoms of exposure to a related compound may include respiratory system irritation, eye irritation, softening and whitening of the skin followed by the development of painful burns, headache, dizziness, rapid and difficult breathing, weakness, collapse, abdominal pain, nausea, vomiting, internal damage, digestive disturbances, nervous disorders, skin eruptions, liver and kidney damage and dermatitis. Other symptoms may include coma, painless blanching or erythema, corrosion, profuse sweating, intense thirst, diarrhea, cyanosis from methemoglobinemia, hyperactivity, stupor, decrease in blood pressure, hyperpnea, hemolysis, convulsions, pulmonary edema followed by pneumonia, jaundice, oliguria, anuria and skin sensitivity reactions. Skin contact may result in central nervous system damage, cerebral edema and muscle contractions. ACUTE/CHRONIC HAZARDS: A related compound may be absorbed through the skin. (NTP, 1992)

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

For advanced treatment: Consider orotracheal or nasotracheal intubation for airway control in the patient who is unconscious or in respiratory arrest. Positive-pressure ventilation techniques with a bag-valve-mask device may be beneficial. Monitor cardiac rhythm and treat arrhythmias if necessary . Start an IV with D5W TKO /SRP: To keep open, "minimal flow rate"/. Use lactated Ringer's if signs of hypovolemia are present. Watch for signs of fluid overload. Consider drug therapy for pulmonary edema . For hypotension with signs of hypovolemia, administer fluid cautiously. Consider vasopressors for hypotension with a normal fluid volume. Watch for signs of fluid overload . Administer 1% solution methylene blue if patient is symptomatic with severe hypoxia, cyanosis, and cardiac compromise not responding to oxygen. . Treat seizures with diazepam (Valium). ... Use proparacaine hydrochloride to assist eye irrigation . Phenols and related compounds/

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## SECTION 5: Firefighting measures

### Extinguishing media

Extinguish fire using agent suitable for type of surrounding fire. Material itself does not burn or burns with difficulty.

## Specific Hazards Arising from the Chemical

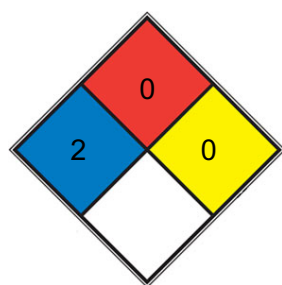
Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: Combustible material: may burn but does not ignite readily. When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Runoff may pollute waterways. Substance may be transported in a molten form. (ERG, 2016)

Flash point data for this chemical are not available; however, it is probably combustible. (NTP, 1992)

## Advice for firefighters

Use foam, dry powder, carbon dioxide.

## NFPA 704



**HEALTH 2** Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. [diethyl ether](#), ammonium phosphate, iodine)

**FIRE 0** Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)

**REACT 0** Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium,[N2](#))

**SPEC.**  
**HAZ.**

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

### Environmental precautions

Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

### Methods and materials for containment and cleaning up

Land Spill: Dig a pit, pond, lagoon, or holding area /SRP: If time permits, pits, ponds, lagoons, soa holes, or holding areas should be sealed with an impermeable flexible membrane liner./ to contain liquid or solid material. Cover solids with plastic sheet to prevent dissolving in rain or

fire fighting water.

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## SECTION 7: Handling and storage

### Precautions for safe handling

NO open flames. Above 62°C use a closed system and ventilation. 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 in an area without drain or sewer access. Provision to contain effluent from fire extinguishing. Separated from strong oxidants and food and feedstuffs.

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## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Occupational Exposure limit values

Component	2,3,4-trichlorophenol			
CAS No.	15950-66-0			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Denmark	?	0,5	?	1
Sweden	?	0,5	?	1,5 (1)
	Remarks			
Sweden	(1) 15 minutes average value			

#### Biological limit values

no data available

### Exposure 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

#### Eye/face protection

Wear safety goggles or eye protection in combination with breathing protection if powder.

#### Skin protection

Protective gloves.

#### Respiratory protection

Use local exhaust or breathing protection.

#### Thermal hazards

no data available

## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical state	neat
Colour	Solid crystals or flakes
Odour	Strong disinfectant odor
Melting point/freezing point	75-79°C(lit.)
Boiling point or initial boiling point and boiling range	260.3°C at 760 mmHg
Flammability	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	111.2°C
Auto-ignition temperature	Not flammable (USCG, 1999)
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	less than 1 mg/mL at 68° F (NTP, 1992)
Partition coefficient n-octanol/water	3.6
Vapour pressure	0.00763mmHg at 25°C
Density and/or relative density	1.596 g/cm <sup>3</sup>
Relative vapour density	(air = 1): 6.8
Particle characteristics	no data available

## SECTION 10: Stability and reactivity

### Reactivity

Decomposes on heating and on burning. This produces toxic fumes. Reacts with oxidants, acid anhydrides and acid chlorides.

### Chemical stability

no data available

### Possibility of hazardous reactions

Non-combustible Phenols, such as TRICHLOROPHENOL, do not behave as organic alcohols, as one might guess from the presence of a hydroxyl (-OH) group in their structure. Instead, they react as weak organic acids. Phenols and cresols are much weaker as acids than common carboxylic acids (phenol has  $pK_a = 9.88$ ). These materials are incompatible with strong reducing substances such as hydrides, nitrides, alkali metals, and sulfides. Flammable gas ( $H_2$ ) is often generated, and the heat of the reaction may ignite the gas. Heat is also generated by the acid-base reaction between phenols and bases. Such heating may initiate polymerization of the organic compound. Phenols are sulfonated very readily (for example, by concentrated sulfuric acid at room temperature). The reactions generate heat. Phenols are also nitrated very rapidly, even by dilute nitric acid.

### Conditions to avoid

no data available

#### **Incompatible materials**

no data available

#### **Hazardous decomposition products**

no data available

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## **SECTION 11: Toxicological information**

#### **Acute toxicity**

- Oral: LD50 Guinea pig oral 1000-3000 mg/kg
- Inhalation: no data available
- Dermal: no data available

#### **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**

See Notes.

#### **STOT-repeated exposure**

See Notes.

#### **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.

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## **SECTION 12: Ecological information**

## Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

## Persistence and degradability

Terrestrial Fate: Studies on the aerobic and anaerobic degradation of phenol and selected chlorophenols were carried out using clay loam soil containing no added nutrients. The phenolic cmpd were added to flasks containing soil to give an initial concn of 100 ug/g wet wt soil.

Under aerobic conditions, ... 2,4,5-trichlorophenol was ... degraded by microorganisms. Under anaerobic conditions, none of the cmpd studied were degraded by microorganisms. The cmpd appeared to stimulate microbial growth in the soil. Phenol and selected chlorophenols

## Bioaccumulative potential

no data available

## Mobility in soil

no data available

## Other adverse effects

no data available

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# 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.

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# SECTION 14: Transport information

## UN Number

ADR/RID: UN2020 (For reference only, please check.)

IMDG: UN2020 (For reference only, please check.)

IATA: UN2020 (For reference only, please check.)

## UN Proper Shipping Name

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

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



IATA: CHLOROPHENOLS, 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: III (For reference only, please check.)

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

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

### **Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

### **Special precautions for user**

no data available

### **Transport in bulk according to IMO instruments**

no data available

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## **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**

Not Listed.

#### **China Catalog of Hazardous chemicals 2015**

Not Listed.

#### **New Zealand Inventory of Chemicals (NZIoC)**

Listed.

#### **PICCS**

Not Listed.

#### **Vietnam National Chemical Inventory**

Listed.

#### **IECSC**

Not Listed.

#### **Korea Existing Chemicals List (KECL)**

Not Listed.

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## 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?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=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

Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. No data are available on this isomer but a mixture of trichlorophenols may cause irritation of the skin, eyes and respiratory tract. These substances may cause acute metabolic effects resulting in damage in several organs notably CNS. Some technical products may contain highly toxic impurities including polychlorinated dibenzo-p-dioxins and furans. Depending on the degree of exposure, periodic medical examination is suggested.

#### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.