



SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name 2,4,5-trichlorophenol

1.2 Other means of identification

Product number -
Other names RCRA waste no. U230; Phenol, 2,4,5-trichloro-; Nurelle

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.
Uses advised against no data available

1.4 Supplier's details

Company Shanghai Yien Chemical Technology Co., Ltd
Address Building 6, 28 Yingong Road, Fengxian District, Shanghai
Chemical Industry Zone, Shanghai, 201400, China
Telephone +86-400-133-2688

1.5 Emergency phone number

Emergency phone number +86-400-133-2688
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Skin irritation, Category 2
Eye irritation, Category 2
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Warning
Hazard statement(s) H302 Harmful if swallowed
H315 Causes skin irritation

	H319 Causes serious eye irritation H410 Very toxic to aquatic life with long lasting effects
Precautionary statement(s)	
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/... P273 Avoid release to the environment.
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+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	none
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.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
2,4,5-trichlorophenol	2,4,5-trichlorophenol	95-95-4	202-467-8	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. To remove substance use polyethylene glycol 300 or vegetable oil. Rinse and then wash skin with water and soap.

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. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to large amounts of this compound may include irritation of the skin, eyes, nose and throat. The dust may cause swelling and injury to the eyes. Eye contact may also result in conjunctivitis and slight to moderate corneal injuries. Other toxic effects include decrease of activity, motor weakness and convulsive seizures. It also causes lung, kidney and liver damage; an increase and then a decrease in respiratory rate, decrease in urine output, fever, increased bowel action and collapse.

ACUTE/CHRONIC HAZARDS: This compound is an irritant of the skin, eyes, nose and throat. When heated to decomposition it emits toxic fumes of chloride ion; decomposition

may be violent. There is limited evidence that this compound is a human carcinogen. (NTP, 1992)

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

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Phenols and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

If material /is/ involved in /a/ fire, extinguish fire using agent suitable for type of surrounding fire. Material itself does not burn or burns with difficulty. Trichlorophenol

5.2 Specific hazards arising from the chemical

Literature sources indicate that this chemical is nonflammable. (NTP, 1992)

5.3 Special protective actions for fire-fighters

Use foam, powder, carbon dioxide.

SECTION 6: Accidental release measures

6.1 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 sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

6.2 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 sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. NO contact with strong oxidizing agents. 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.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants and food and feedstuffs. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing. Storage temp: ambient

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Component	2,4,5-trichlorophenol			
CAS No.	95-95-4			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m³	ppm	mg/m³
Austria	0,012	0,1	0,048	0,4
Denmark		0,5		1
Sweden		0,5		1,5 (1)
	Remarks			
Sweden	(1) 15 minutes average value			

Biological limit values

no data available

8.2 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.

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

Eye/face protection

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

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	PHYSICAL DESCRIPTION: Colorless needles, gray flakes or off-white lumpy solid. Phenolic odor. Formerly used as a fungicide and bactericide.
Colour	Needles from alcohol, petroleum ether
Odour	Strong phenolic odor
Melting point/freezing point	19°C(lit.)
Boiling point or initial boiling point and boiling range	115°C/10mmHg(lit.)
Flammability	Combustible under specific conditions. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	95°C(lit.)
Auto-ignition temperature	no data available
Decomposition temperature	no data available

pH	Weak monobasic acid
Kinematic viscosity	no data available
Solubility	less than 1 mg/mL at 70° F (NTP, 1992)
Partition coefficient n-octanol/water	log Kow = 3.72
Vapour pressure	1 mm Hg at 162° F ; 5 mm Hg at 215.8° F (NTP, 1992)
Density and/or relative density	1,678 g/cm ³
Relative vapour density	greater than 1 (NTP, 1992) (Relative to Air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

May explode on heating to decomposition. Decomposes on heating and on contact with strong oxidants. This produces toxic and irritating fumes (chlorine, hydrochloric acid). The substance is a weak acid. Reacts in an alkaline medium at high temperatures producing highly toxic chlorinated dioxins.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Non-combustible. /Trichlorophenol/2,4,5-TRICHLOROPHENOL is a weak monobasic acid. Incompatible with acid chlorides, acid anhydrides and oxidizing agents. Produces dioxin in alkaline medium at high temperatures (NTP, 1992)

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

The reaction of 2,4,5-trichlorophenol in an alkaline medium at high temperatures ... /produces/ ... dioxin .

10.6 Hazardous decomposition products

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

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 820 mg/kg; Solvent: fuel oil
- 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

Evaluation: There is limited evidence in humans for the carcinogenicity of combined exposures to polychlorophenols or to their sodium salts. ... There is inadequate evidence in

experimental animals for the carcinogenicity of 2,4,5-trichlorophenol. ... Overall evaluation: Combined exposures to polychlorophenols or to their sodium salts are possibly carcinogenic to humans (Group 2B). Polychlorophenols

Reproductive toxicity

No information is available on the reproductive or developmental effects of 2,4,5-trichlorophenol in humans. In several studies of mice exposed to 2,4,5-trichlorophenol via gavage (experimentally placing the chemical in the stomach), no birth defects were observed. In one study, a reduction in litter size was reported. No changes in maternal or fetal parameters were noted in rats exposed to 2,4,5-trichlorophenol by injection. (4)

STOT-single exposure

The substance is severely irritating to the eyes, skin and respiratory tract.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the liver and kidneys. 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 when dispersed.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: *Lepomis macrochirus* (Bluegill) weight 1.16 g; Conditions: freshwater, static; Concentration: 1280 ug/L for 96 hr (95% confidence interval: 1160-1415 ug/L /32.7% purity)
- Toxicity to daphnia and other aquatic invertebrates: LC50; Species: *Daphnia magna* (Water Flea) age <24 hr neonate; Conditions: freshwater, static, 25 deg C, pH 8.0, hardness 150 mg/L CaCO₃, alkalinity 121 mg/L CaCO₃; Concentration: 2080 ug/L for 48 hr
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: The rate of 2,4,5-trichlorophenol biodegradation (measured by CO₂ evolution) in river water and sediment corresponded to half-lives of 690 and 23 days, respectively(1). Using the Japanese MITI test, 2,4,5-trichlorophenol present at 100 ppm underwent <30% degradation in 2 weeks using an activated sludge at 30 ppm(2). Mixed microbial cultures isolated from toluene and phenol activated sludge, resulted in 50% biodegradation of 2,4,5-trichlorophenol in 2 days(3). 2,4,5-Trichlorophenol, present at 50 mg/L, took >47 and >72 days for complete degradation when added to 2 different soil suspensions(4). 2,4,5-Trichlorophenol was aerobically degraded 72% and 9% in 80 days in non-sterile and sterile clay loam, respectively(5). Microbial degradation, volatilization, and photodecomposition were ruled out in the sterile soil indicating that other mechanisms contribute to degradation(5). An aerobic biodegradation half-life of 23 days was determined for 2,4,5-trichlorophenol from a river die-away test(6). Biodegradation half-life (measured by loss of UV absorbance) for 10 ug/L 2,4,5-trichlorophenol added to a soil suspension was 15 days(7). Soil microbes metabolized 2,4,5-trichlorophenol to 3,5-dichlorocatechol, 4-chlorocatechol, succinate, cis,cis-2,4-dichloromuconate, 2-chloro-4-(carboxymethylene)but-2-enolide, and chlorosuccinate(7).

12.3 Bioaccumulative potential

Using carp (*Cyprinus carpio*) which were exposed over an 8-week period to 10 and 1 ug/L of 2,4,5-trichlorophenol, respective measured BCFs were 121-484 and 232-825(1). A log BCF of 3.28 was reported for fathead minnows exposed to 2,4,5-trichlorophenol for 28 days(2). According to a classification scheme(3), these BCF values suggest that bioconcentration in aquatic organisms is high to very high(SRC).

12.4 Mobility in soil

Koc values of 89(1), 2300(2), and 1700 in Pahokee peat(3) have been reported. According to a classification scheme(4), these Koc values suggest that 2,4,5-trichlorophenol is

expected to have high to slight mobility in soil. The pKa of 2,4,5-trichlorophenol is 7.43(5), indicating that this compound will exist partially in anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(6).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 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

14.1 UN Number

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

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

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

14.2 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.)

14.3 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.)

14.4 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.)

14.5 Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
2,4,5-trichlorophenol	2,4,5-trichlorophenol	95-95-4	202-467-8

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	Listed.
New Zealand Inventory of Chemicals (NZIoC)	Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Not Listed.
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Not Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019

Revision Date July 15, 2019

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

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. If the substance is formulated with solvents also consult the ICSCs of these materials. Carrier solvents used in commercial formulations may change physical and toxicological properties. See ICSCs 588, 589, 590 and 1122.

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

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 damage resulting from handling or from contact with the above product.