ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

2-Chlorotoluene

Revision Date:2025-01-11 Revision Number:1

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

Product identifier

Product name	: 2-Chlorotoluene
CBnumber	: CB9245073
CAS	: 95-49-8
EINECS Number	: 202-424-3
Synonyms	: OCT,2-CHLOROTOLUENE

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	: 400-158-6606

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Inhalation

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

Label elements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H225 Highly Flammable liquid and vapour

H226 Flammable liquid and vapour

H332 Harmful if inhaled

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

H360 May damage fertility or the unborn child

H361 Suspected of damaging fertility or the unborn child

H370 Causes damage to organs

H373 May cause damage to organs through prolonged or repeated exposure

H400 Very toxic to aquatic life

H401 Toxic to aquatic life

H411 Toxic to aquatic life with long lasting effects

Precautionary statement(s)

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

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

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

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

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.

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

P391 Collect spillage. Hazardous to the aquatic environment

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P304+P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P370+P378 In case of fire: Use … for extinction.

P405 Store locked up.

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

P501 Dispose of contents/container to.....

Prevention

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

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

P317 Get medical help.

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.

Other hazards

no data available

SECTION 3: Composition/information on ingredients

Substance

Product name	: 2-Chlorotoluene
Synonyms	: OCT,2-CHLOROTOLUENE
CAS	: 95-49-8
EC number	: 202-424-3
MF	: C7H7Cl
MW	: 126.58

SECTION 4: First aid measures

Description of first aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

First rinse with plenty of water for at least 15 minutes, then remove contaminated clothes and rinse again.

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

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

Most important symptoms and effects, both acute and delayed

Inhalation of vapor may cause respiratory irrtation. Prolonged and repeated vapor exposures may produce systemic toxic effects. (USCG, 1999)

Indication of any immediate medical attention and special treatment needed

Absorption, Distribution and Excretion

Applied under occlusive dressing to 2 guinea pigs ... there was ... evidence of skin absorption ...

SECTION 5: Firefighting measures

Extinguishing media

If material on fire or involved in fire: Do not extinguish fire unless flow can be stopped or safely confined. Use water in flooding quantities as fog. Solid streams of water may spread fire. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Use foam, dry chemical, or carbon dioxide. Chlorotoluenes

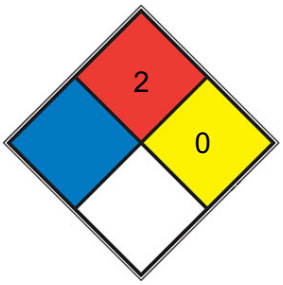
Specific Hazards Arising from the Chemical

Special Hazards of Combustion Products: May contain toxic chloride fumes. Behavior in Fire: Container may explode in heat of fire. Vapor may travel to a source of ignition and flashback. Vapor explosion hazard indoors, outdoors or in sewer. Toxic chloride fumes may be produced. (USCG, 1999)

Advice for firefighters

Use water spray, carbon dioxide, foam, powder. In case of fire: keep drums, etc., cool by spraying with water.

NFPA 704



HEALTH		
FIRE	2	Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, sulfur)
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 vapours adapted to the airborne concentration of the substance. Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment.

Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment.

Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Above 43°C use a closed system, ventilation and explosion-proof electrical equipment. 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

Fireproof. Separated from strong oxidants.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 50 ppm as TWA

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 spectacles.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Physical state	Liquid
Colour	Clear
Odour	Aromatic odor.
Melting point/freezing point	-35.6 °C.
Boiling point or initial boiling point and boiling range	159.2 °C. Atm. press.:1 013 hPa.
Flammability	Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F.
Lower and upper explosion limit/flammability limit	1.0-12.6%(V)
Flash point	43 °C.
Auto-ignition temperature	> 500 °C.
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	dynamic viscosity (in mPa s) = 1.022. Temperature:20°C.

Solubility	H2O: slightly soluble0.047g/L at 20°C
Partition coefficient n-octanol/water	log Pow = 3.185.
Vapour pressure	10 mm Hg (43 °C)
Density and/or relative density	1.08. Temperature:20 °C.
Relative vapour density	4.38 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

On combustion, forms toxic and corrosive fumes including hydrogen chloride and phosgene. Reacts with oxidants.

Chemical stability

no data available

Possibility of hazardous reactions

SLIGHT, WHEN EXPOSED TO HEAT OR FLAME. /4-CHLOROTOLUENE/O-CHLOROTOLUENE may be incompatible with strong oxidizing and reducing agents. Also may be incompatible with amines, nitrides, azo/diazo compounds, alkali metals, and epoxides. Reacts violently with dimethyl sulfoxide (NTP, 1992).

Conditions to avoid

no data available

Incompatible materials

Acids, alkalis, oxidizers, reducing materials, water.

Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 - rat (male) - 3 227 mg/kg bw.
- Inhalation: LC50 - rat (male) - 7 119 ppm.
- Dermal: LD50 - rat (male/female) - > 1 080 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 irritating to the eyes, skin and respiratory tract.

STOT-repeated exposure

The substance defats the skin, which may cause dryness or cracking.

Aspiration hazard

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - Oryzias latipes - 7.7 mg/L - 96 h.
Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 0.7 mg/L - 48 h.
Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - 7.8 mg/L - 72 h.
Toxicity to microorganisms: TT - Pseudomonas putida - 15 mg/L - 16 h.

Persistence and degradability

In the Japanese MITI test, using an initial concn of 100 ppm 2-chlorotoluene, <30% of the theoretical BOD was reached in 14 days using an activated sludge inoculum(1,2). In the modified MITI test, using an initial concentration of 100 ppm 2-chlorotoluene, 0% of the theoretical BOD was reached in 14 days(3). A second order rate constant for the microbial degradation of 2-chlorotoluene in natural water was experimentally determined to be 2.7X10-11 L/organism-hr(4). Microorganisms capable of degrading 2-chlorotolune were isolated from soil samples collected at a landfill site used for the disposal of chlorinated organic wastes(5). A microbial blend of 10 different bacteria and 2 fungi was used to degrade 2-chlorotoluene at a concentration of 200 mg/l; complete biodegradation occurred in 3 days(6).

Bioaccumulative potential

Carp exposed to 2-chlorotoluene at 0.045 and 0.45 mg/L had measured BCF values of 20-112 and 41.6-87.2, respectively(1). An estimated BCF value of 230 was calculated for 2-chlorotoluene(SRC), using a measured log Kow of 3.42(2) and a recommended regression-derived equation(3). According to a recommended classification scheme(4), these BCF values suggest that bioconcentration of 2-chlorotoluene in aquatic organisms may occur(SRC).

Mobility in soil

Measured soil adsorption coefficients (Koc) for 2-chlorotoluene ranged between 170-880, the average value was 370(1). According to a recommended classification scheme(3), these Koc values suggest that 2-chlorotoluene will have low to moderate mobility in soil(2,SRC).

Toxics Screening Level

The current ITSL for o-chlorotoluene (70 µg/m3) has a justification (attached) dated April 19,2001.

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: UN2238 (For reference only, please check.)

IMDG: UN2238 (For reference only, please check.)

IATA: UN2238 (For reference only, please check.)

UN Proper Shipping Name

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

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

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

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (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: 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

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/