Chemical Safety Data Sheet MSDS / SDS

1,2,3,4-tetrachlorobenzene SDS

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

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

Product identifier

Product name: 1,2,3,4-tetrachlorobenzene

CAS: 634-66-2

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

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SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Warning

Hazard statement(s)

H302 Harmful if swallowed
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.
P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
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 which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	1,2,3,4-tetrachlorobenzene
Common names and synonyms:	1,2,3,4-tetrachlorobenzene
CAS number:	634-66-2
EC number:	211-214-0
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

Most important symptoms/effects, acute and delayed

ACUTE/CHRONIC HAZARDS: This compound may cause irritation of the skin. (NTP, 1992)

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

Absorption, Distribution and Excretion

Three tetrachlorobenzene (TCB) congeners (1,2,3,4- 1,2,3,5- and 1,2,4,5-tetrachlorobenzene) were administered daily by gavage to pregnant Sprague-Dawley rats at levels of 50, 100, or 200 mg/kg from day 6-15 of gestation. Residues of all three congeners

were found in maternal and fetal tissues but generally the amounts of the 1,2,4,5- isomer were about 100 times higher than the other two.

SECTION 5: Firefighting measures

Suitable extinguishing media

Fires involving this material should be controlled using 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

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours.Avoid contacting with skin and eye. Use personal protective equipment.Wear chemical impermeable gloves. Ensure adequate ventilation.Remove all sources of ignition. Evacuate personnel to safe areas.Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

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

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 tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	PHYSICAL DESCRIPTION: White to off-white crystals. (NTP, 1992)
Colour:	Colorless needles
Odour:	no data available
Melting point/freezing point:	44-48°C
Boiling point or initial boiling point and boiling range:	254°C(761 torr)
Flammability:	no data available
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	111.9°C
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 70° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Kow= 4.64
Vapour pressure:	1 mm Hg at 155.3° F ; 5 mm Hg at 211.3° F; 760 mm Hg at 489° F (NTP, 1992)

Density and/or relative density:	1,73 g/cm3
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

Simple aromatic halogenated organic compounds, such as 1,2,3,4-TETRACHLOROBENZENE, are very unreactive. Halogenated organics generally become less reactive as more of their hydrogen atoms are replaced with halogen atoms. Materials in this group may be incompatible with strong oxidizing and reducing agents. Also, they may be incompatible with many amines, nitrides, azo/diazo compounds, alkali metals, and epoxides.

Conditions to avoid

no data available

Incompatible materials

In mfr of sodium salt of trichlorophenol, sodium hydroxide, methyl alcohol & tetrachlorobenzene were heated. during heating process, pressure suddenly incr rapidly & explosion occurred. tetrachlorobenzene

Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /hydrogen chloride/.

SECTION 11: Toxicological information

Acute toxicity

Oral: no data available

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

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 Pimephales promelas (fathead minnow) 1.1 mg/l 96 hr flow-through bioassay, wt 0.12 g, water hardness 45.5 mg/l CaCO3, temp: 25 +/- 1 deg C, pH 7.5, dissolved oxygen greater than 60% of saturation

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

A 0% theoretical BOD in sludge over a 4 week incubation period suggests that biodegradation of 1,2,3,4-tetrachlorobenzene will be slow(1). 1,2,3,4-Tetrachlorobenzene was biodegraded by an acclimated anaerobic sediment slurry obtained from the Tsurumi River, Japan(2). The first-order biodegradation rate constant was 0.038 days-1, corresponding to a half-life of about 18 days(2). The half-life of 1,2,3,4-tetrachlorobenzene in sewage sludge amended soil was 34.5 days(3). An enriched microbial culture derived from sediment of the Rhine River reductively dechlorinated 1,2,3,4-tetrachlorobenzene to 1,2,4-trichlorobenzene in 280 days after a lag period of 47 days(4).

Bioaccumulative potential

BCF values of 520 to 1,560 were measured in carp exposed to 10 ug/l of 1,2,3,4-tetrachlorobenzene during a 6 week incubation period and BCF values of 490 to 1,700 were measured in carp exposed to 1 ug/l of 1,2,3,4-tetrachlorobenzene during a 6 week incubation period(1). Mean log BCF values of 3.7-4.1 were measured for rainbow trout exposed to 1,2,3,4-tetrachlorobenzene(2). A mean log BCF value of 3.5 was measured in fathead minnows exposed to 1,2,3,4-tetrachlorobenzene for 2-120 hours(3). A mean BCF value of 5,200 was reported for rainbow trout exposed to low levels of 1,2,3,4-tetrachlorobenzene for 119 days and a mean BCF value of 12,000 was reported for rainbow trout exposed to high concns of 1,2,3,4-tetrachlorobenzene for 119 days(4). According to a classification scheme(5), these BCF values suggest that bioconcentration in aquatic organisms is high.

Mobility in soil

A log Koc value of 3.8(1) was reported for 1,2,3,4-tetrachlorobenzene in soils and log Koc values of 3.5 to 3.8 were reported in sandy and clay loams(2). A log Koc value of 4.4 was reported for 1,2,3,4-tetrachlorobenzene in sediment obtained from Ise Bay, Japan(3) and a log Koc value of 4.7 was reported from sediment of Lake Oostvaardersplassen, Netherlands(4). According to a recommended classification scheme(5), these Koc values suggest that 1,2,3,4-tetrachlorobenzene has low 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: UN3077 (For reference only, please check.)
IMDG: UN3077 (For reference only, please check.)
IATA: UN3077 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)
IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 9 (For reference only, please check.)
IMDG: 9 (For reference only, please check.)
IATA: 9 (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)

Not Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Not 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/