Chemical Safety Data Sheet MSDS / SDS

Fentin chloride 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: Fentin chloride

CAS: 639-58-7

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 3, Oral
Acute toxicity - Category 3, Dermal

Acute toxicity - Category 3, Inhalation
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 Danger

Hazard statement(s)

H301 Toxic if swallowed
H311 Toxic in contact with skin
H331 Toxic if inhaled
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/...
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+P316 IF SWALLOWED: Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P316 Get emergency medical help immediately.
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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:	Fentin chloride
Common names and synonyms:	Fentin chloride
CAS number:	639-58-7
EC number:	211-358-4
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

Toxic and irritating to the skin. Dermal exposure may lead to severe skin burns as well as renal failure and possible death. (Non-Specific -- Tin Compounds, Organic) Target organs affected are central nervous system, eyes, liver, urinary tract, skin and the blood. (EPA, 1998)

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

Absorption, Distribution and Excretion

Triphenyltin chloride when dosed to rats was excreted mainly in the feces (88%) as a mixture of the mono-, di- and triphenyltin salts, and some free stannic (Sn(4+)) salts.

SECTION 5: Firefighting measures

Suitable extinguishing media

Non-Specific -- Pesticide, Solid, n.o.s.) Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Ventilate closed spaces before entering them. Wear positive pressure breathing apparatus and special protective clothing. Remove and isolate contaminated clothing at the site. (Non-Specific -- Pesticide, Solid, n.o.s.) Extinguish fires with dry chemical, carbon dioxide, water spray, fog, or foam. Move container from fire area if you can do so without risk. Fight fire from maximum distance. Dike fire control water for later disposal; do not scatter the material. (EPA, 1998)

Specific hazards arising from the chemical

When heated to decomposition, it emits toxic fumes of chlorides. Hydrolyzes to hydroxide in water. Stable when stored in dark with dry air. (EPA, 1998)

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

The compounds should not be allowed to enter drains or watercourses. Triphenyltin compounds

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 in a cool, dry place away from feed & foodstuffs. ...

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:	Triphenyltin chloride is a white crystalline solid. Used as a rodent repellent, molluscicide, fungicide and insecticide. (EPA, 1998)
Colour:	White, crystalline solid
Odour:	no data available
Melting point/freezing point:	97 - 107°C
Boiling point or initial boiling point and boiling range:	240°C at 13.5 mmHg
Flammability:	no data available
Lower and upper explosion limit/flammability limit:	no data available

Flash point:	199.7°C
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	40 ppm in water at 20 deg C
Partition coefficient n-octanol/water:	log Kow = 4.19
Vapour pressure:	no data available
Density and/or relative density:	1.49 g/cm3 (20°C)
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Hydrolyzes to hydroxide in water.

Chemical stability

Stable when stored in dark with directed air. Hydrolyses to hydroxide in water.

Possibility of hazardous reactions

TRIPHENYLTIN CHLORIDE is in the family of tin compounds widely used as stabilizers for plastics, additives to paint(as antifouling agents). Some have catalytic properties. Examples include butyl tin, dibutyl tin oxide. Their main hazard is associated with their high toxicity, in skin adsorption or inhalation.

Conditions to avoid

no data available

Incompatible materials

Death from exploded charges in the preparation of organotin salts from triphenyl tin chloride /was reported/.

Hazardous decomposition products

When heated to decomposition it emits toxic fumes of chlorides.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 190 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

A4; Not classifiable as a human carcinogen. Tin, organic compounds, as Sn

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: 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

The half-life of triphenyltins has been reported to be 3-14 days in field soils planted with a variety of crops(2). Structurally similar C14-phenyl ring-labelled triphenyltin acetate is degraded to inorganic tin in soil presumably by biodegradation since carbon dioxide was evolved and the breakdown did not occur in sterile soil(1,3). Triphenyltin fluoride has been observed to degrade in soil faster under aerobic than anaerobic conditions(1).

Bioaccumulative potential

A BCF of 800 for rainbow trout was observed after a 4-day exposure(1). The uptake and elimination rates of radiolabeled triphenyltin hydroxide in guppies were 41 l/kg-day and 0.014/day, giving a BCF (uptake: elimination ratio) of 2900 l/kg (wet

weight) during 30 days of exposure(1). For rainbow trout larvae the uptake and elimination rates were 22 l/kg-day and 0.031/day, respectively giving a BCF of 650 ml/g after 4 days; the lower BCF in the trout than the guppies being a result of the higher elimination rate. Since equilibrium was not reached, the bioconcentration factor was underestimated(1). The log BCFs of triphenyltin in crucian carp obtained in a 7-day experiment were 1.70 (muscle), 1.70 (vertebra); 2.05 (liver); and 1.49 (kidney)(2). In studies in which the bioaccumulation and elimination of triphentyltin in Red Sea bream (Pagrus major) was by direct uptake from water, from diet, and from both simultaneously, about a quarter of the bioaccumulation was due to dietary uptake(3). The bioaccumulation factor was 0.257. The elimination rate was 0.020/day and was independent of the source of uptake, water or diet(3). Bioaccumulation was also independent of the form of triphenyltin in the diet(3). Minnow (Phoxinus phoxinus) embryos/larvae and freshly hatched larvae were exposed to triphenyltin chloride in Lake Lucerne, Switzerland water at 16 deg C(4). The BCF for embryo larvae was 530 at the end of a 192 hr uptake period. Newly hatched larvae had BCFs of 457 and 930 after 96 and 144 hours. At this time the BCF had not reached a plateau so the actual BCF was higher. While uptake of triphenyltin from water was rapid, elimination was absent during a 96-hr depuration period(4). The concn of the metabolites monophenyltin and diphenyltin were very low(4). According to a classification scheme(5), these BCF vales suggest that bioconcentration in aquatic organisms is high(SRC).

Mobility in soil

If triphenyltin chloride is released to soil, it either exists as, or is rapidly converted to oxides, hydroxides, carbonates, or hydrated cations(1). Oxides, hydroxides, carbonates or cations are not expected to leach through soil(SRC). In a laboratory soil leaching study, triphenyltins were strongly attached to soil(2). This also suggests that triphenyltins (such as triphenyltin chloride) may be expected to have low mobility in soil(SRC). The Freundlich parameters, log k and 1/n, for triphenyltin to sediment were 1.81 and 0.793, respectively(3). In a study of the adsorption behavior of triphenyltin chloride in clay sediments, the ratio of the compound in sediment to that in water was approx 20:1(1).

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: UN3146 (For reference only, please check.)
IMDG: UN3146 (For reference only, please check.)
IATA: UN3146 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ORGANOTIN COMPOUND, SOLID, N.O.S. (For reference only, please check.)
IMDG: ORGANOTIN COMPOUND, SOLID, N.O.S. (For reference only, please check.)
IATA: ORGANOTIN COMPOUND, SOLID, N.O.S. (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: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (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/