

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2
Creation Date: July 15, 2019
Revision Date: August 08, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name Triphenyltin Chloride

1.2 Other means of identification

Product number LOTI111610-ME

Other names -

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175

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 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

2.2 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.

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
Triphenyltin Chloride	Fentin chloride	639-58-7	211-358-4	100%

SECTION 4: First-aid measures

4.1 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.

4.2 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)

4.3 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: Fire-fighting measures

5.1 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)

5.2 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)

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 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.

6.2 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.

6.3 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

7.1 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.

7.2 Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

no data available

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

Skin protection

Wear fire/flammable 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

10.1 Reactivity

Hydrolyzes to hydroxide in water.

10.2 Chemical stability

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

10.3 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.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

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

10.6 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

12.1 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

12.2 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).

12.3 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 triphenyltin 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 values suggest that bioconcentration in aquatic organisms is high(SRC).

12.4 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).

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: UN3146 (For reference only, please check.)	IMDG: UN3146 (For reference only, please check.)	IATA: UN3146 (For reference only, please check.)
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14.2 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.)
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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.)
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14.4 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.)

14.5 Environmental hazards

ADR/RID: Yes	IMDG: Yes	IATA: Yes
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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
Fentin chloride	Fentin chloride	639-58-7	211-358-4
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.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019
Revision Date August 08, 2025

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/>

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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