

Chemical Safety Data Sheet MSDS / SDS

Cyhexatin

Revision Date:2024-12-21 Revision Number:1

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

Product identifier

Product name : Cyhexatin
CBnumber : CB9682838
CAS : 13121-70-5
EINECS Number : 236-049-1
Synonyms : Cyhexatin,TCTH

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 : 010-86108875

SECTION 2: Hazards identification

Classification of the substance or mixture

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

Label elements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H301 Toxic if swallowed
H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P273 Avoid release to the environment.

P391 Collect spillage. Hazardous to the aquatic environment

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+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P317 Get medical help.

P321 Specific treatment (see ... on this label).

P362+P364 Take off 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

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	: Cyhexatin
Synonyms	: Cyhexatin, TCTH
CAS	: 13121-70-5
EC number	: 236-049-1
MF	: C ₁₈ H ₃₄ O ₈ N
MW	: 385.17

SECTION 4: First aid measures

Description of 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 and effects, both acute and delayed

Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact Symptoms: Irritation eyes, skin, respiratory system; headache, dizziness; sore throat, cough; abdominal pain, vomiting; skin burns, pruritus Target Organs: Eyes, skin, respiratory system, liver, kidneys (NIOSH, 2016)

Indication of any immediate medical attention and special treatment needed

Absorption, Distribution and Excretion

In metabolic study in rats given 25 mg/kg (119)tin labeled tricyclohexylhydroxytin orally, almost all radioactivity was recovered in the urine & feces during a 9 day period with about 80% in the first 4 days, the feces containing 98%, & the urine 2%.

SECTION 5: Firefighting measures

Extinguishing media

Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]: SMALL FIRE: Dry chemical, CO₂ or water spray. LARGE FIRE: Dry chemical, CO₂, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. (ERG, 2016)

Specific Hazards Arising from the Chemical

Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.). Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. For electric vehicles or equipment, ERG Guide 147 (lithium ion batteries) or ERG Guide 138 (sodium batteries) should also be consulted. (ERG, 2016)

Advice for firefighters

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 Book

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

Keep in cool place. Keep contents under ... (appropriate liquid to be specified by the manufacturer). Keep under ... (inert gas to be specified by the manufacturer). Keep container tightly closed. Keep container dry. Keep container in well-ventilated place. Do not keep the container sealed.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	Cyhexatin			
CAS No.	13121-70-5			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m ³	ppm	mg/m ³
Australia	?	5	?	?
Belgium	?	5	?	?
Canada - Ontario	?	5	?	?
Canada - Québec	?	5	?	?
Denmark	?	5	?	10
France	?	5	?	?
Ireland	?	5	?	10 (1)
Singapore	?	1	?	?
South	?	5	?	?

Korea				
Spain	?	5	?	?
USA - NIOSH	?	5	?	?
United Kingdom	?	[5]	?	[10]
	Remarks			
Ireland	(1) 15 minutes reference period			
United Kingdom	The UK Advisory Committee on Toxic Substances has expressed concern that, for the OELs shown in parentheses, health may not be adequately protected because of doubts that the limit was not soundly-based. These OELs were included in the published UK 2002 list and its 2003 supplement, but are omitted from the published 2005 list.			

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

Skin protection

Wear fire/flamm 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

Information on basic physicochemical properties

Physical state	solid
Colour	White crystalline powder
Odour	Nearly odorless
Melting point/freezing point	195-198°C
Boiling point or initial boiling point and boiling range	426.1°C
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	211.5°C
Auto-ignition temperature	no data available

Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	Insoluble (NIOSH, 2016)
Partition coefficient n-octanol/water	no data available
Vapour pressure	3×10^{-7} Pa (20 °C)
Density and/or relative density	no data available
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

80 mg/cu m [25 mg/cu m (as Sn)]

Chemical stability

Stable to 100 deg c in aqueous suspensions from slightly acid (ph 6) to alkaline; degraded by u.v. light.

Possibility of hazardous reactions

CYHEXATIN is incompatible with strong oxidizing agents. Soluble in some organic solvents (acetone 1.3 g/L; xylenes 3.6 g/L; carbon tetrachloride 28 g/L; dichloromethane 34 g/L). Stable in aqueous suspensions in neutral and alkaline pH (above pH 6), but reacts exothermically as a base in the presence of strong acids to form salts. Converts to dicyclohexyltin oxide and further to cyclohexylstannoic acid upon exposure to ultraviolet radiation.

Conditions to avoid

no data available

Incompatible materials

Strong oxidizers, ultraviolet light.

Hazardous decomposition products

When heated to decomp ... emits acrid smoke and irritating fumes.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 190 mg/kg
- Inhalation: no data available
- Dermal: LD50 Rabbit percutaneous >2000 mg/kg

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

Cancer Classification: Data are Inadequate for an Assessment of Human Carcinogenic Potential

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

Studies with plictran indicated degradation proceeded to inorganic tin compounds with stannic acid as the main product.

Bioaccumulative potential

An experimental BCF of 5 has been determined for tricyclohexyltin hydroxide in static ecosystems tests using an unreported species of fish(1). The BCFs in crucian carp obtained in a 7-day experiment were 50(muscle), 50 (vertebra); 112 (liver); and 31 (kidney)(2). According to a classification scheme(3), these BCF values suggest the potential for bioconcentration in aquatic organisms is moderate(SRC).

Mobility in soil

The Koc for tricyclohexyltin hydroxide is >4365(1). According to a classification scheme(2), this Koc value suggests that tricyclohexyltin hydroxide is expected to be immobile in soil. Tricyclohexyltin hydroxide appears to be strongly bound to soil based on a field experiment in which 90% of the cyclohexyltin compounds found in the soil of an orchard sprayed with a tricyclohexyltin hydroxide formulation was present in

the uppermost 1 cm layer of the soil(3).

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: UN2786 (For reference only, please check.)

IMDG: UN2786 (For reference only, please check.)

IATA: UN2786 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ORGANOTIN PESTICIDE, SOLID, TOXIC (For reference only, please check.)

IMDG: ORGANOTIN PESTICIDE, SOLID, TOXIC (For reference only, please check.)

IATA: ORGANOTIN PESTICIDE, SOLID, TOXIC (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

Not Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Not Listed.

PICCS

Not Listed.

Vietnam National Chemical Inventory

Not Listed.

IECSC

Not 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?pagelD=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/>

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