Chemical Safety Data Sheet MSDS / SDS

Dibutyltin dichloride 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: Dibutyltin dichloride

CAS: 683-18-1

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 4, Dermal

Skin corrosion, Sub-category 1B
Acute toxicity - Category 2, Inhalation
Germ cell mutagenicity, Category 2
Specific target organ toxicity – repeated exposure, Category 1
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1
Reproductive toxicity, Category 1B

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H301 Toxic if swallowed
H312 Harmful in contact with skin
H314 Causes severe skin burns and eye damage
H330 Fatal if inhaled
H341 Suspected of causing genetic defects
H372 Causes damage to organs through prolonged or repeated exposure
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/...
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P284 [In case of inadequate ventilation] wear respiratory protection.
P203 Obtain, read and follow all safety instructions before use.
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/...
P317 Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P363 Wash contaminated clothing before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316 Get emergency medical help immediately.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P320 Specific treatment is urgent (see ... on this label).
P318 IF exposed or concerned, get medical advice.
P319 Get medical help if you feel unwell.
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:	Dibutyltin dichloride
Common names and synonyms:	Dibutyltin dichloride
CAS number:	683-18-1
EC number:	211-670-0
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

no data available

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

Absorption, Distribution and Excretion

Within 1 hr after iv injection of 20 umol dibutyltin dichloride, rats excreted in the bile 2x10-5 mol organotin/l. the bile/plasma quotient was 151:1 which indicates an active transport of dibutyltin chloride from liver to the bile. biotransformation was not involved in the excretion.

SECTION 5: Firefighting measures

Suitable extinguishing media

To fight fire, use water, foam, CO2, dry chemical.

Specific hazards arising from the chemical

no data available

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

Component	Dibutyltin dichloride			
CAS No.	683-18-1			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m^3	ppm	mg/m^3
Germany (AGS)	0,0018 (1)	0,009 (1)	0,0018 (1)(2)	0,009 (1)(2)
	Remarks			
Germany (AGS)	(1) Inhalable fraction and vapour (2) 15 minutes average value			

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:	Liquid,OtherSolid
Colour:	White crystalline solid
Odour:	no data available
Melting point/freezing point:	39-41°C
Boiling point or initial boiling point and boiling range:	135°C/10mmHg(lit.)
Flammability:	no data available
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	113°C
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	SOL IN ETHER, BENZENE, ALCOHOL
Partition coefficient n-octanol/water:	log Kow=0.97
Vapour pressure:	2 mm Hg at 100 deg C
Density and/or relative density:	1.4
Relative vapour density:	10.5 (Air = 1)

Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

Combustible when exposed to heat or flame. ... Can react vigorously with oxidizing materials.

Conditions to avoid

no data available

Incompatible materials

Will react with water or steam to produce heat and toxic fumes; can react vigorously with oxidizing materials.

Hazardous decomposition products

Decomp by hot & cold water, decomp at 113.6 deg c, 60 mm hg

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 White mouse oral 35 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 cmpd, 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

Tributyltin species, obtained by dissolution of tributyltin oxide in water, are sequentially degraded by microorganisms to dibutyltin, monobutyltin (similar to the monobutyltin obtained by dissolution of mono-n-butyltin trichloride), and finally to inorganic tin using water/sediment mixtures or water alone from Tornoto Harbor, Canada(1). Butyltin compounds may be susceptible to biomethylation based upon the possible biomethylation of dibutyltin and tributyltin compounds(1).

Bioaccumulative potential

The observed BCF for dibutyltin dichloride in round crucian carp (Carassius carassius grandoculis) muscle, vertebra, liver, and kidney tissue were 12, 46, 135, and 61, respectively(2). In a tin bioconcentration study, the freshwater clam, Anodonta anatina, was exposed to dibutyltin dichloride for 7 months at a total concn of 15 ug tin equivalents/liter(2). Only total tin concn were determined(2). The average concn of tin in the gills, mantle plus mantle-edge, midgut gland, kidney, and remaining tissue fraction were as follows: 0.94, 0.13, 0.22, 0.60, 23.5, and 0.56 ug Sn/g wet wt, respectively(2). The max BCF for dibutyltin dichloride for the tissues are as follows (if all of the tin in the clams was in this form): 63, 8.6, 15, 40, 1,567, and 37, respectively(2). According to a classification scheme(2), a BCF value of 12 suggests bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

Dibutyltin dichloride is expected to dissociate in water forming the cation, dibutyltin(SRC). Cations generally adsorb to organic carbon and clay(SRC). The adsorption of dibutyltin dichloride was studied under simulated estuarine conditions which included artificial seawater (salinity(S)), hydrous iron oxide (moderately particulate matter (PM)), and fulvic acid(1). The partition coefficients Kp (ug/kg)/ug/l) ranged from zero (no adsortion at pH 8.2 and with low S and high PM concn or high S and low PM concn) to 110,000 (at pH 6.2 and high S and low PM concn)(1). Based upon these results, dibutyltin dichloride is expected to exist mainly in the solution (aqueous) phase in estuarine waters and seawater(1). In a study of desorption from sediment, approximately 1% of the initial dibutyltin species was observed to desorb from the unshaken Toronto Harbor sediment/water mixtures in 10.6 months(2).

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: UN2928 (For reference only, please check.)
IMDG: UN2928 (For reference only, please check.)
IATA: UN2928 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S. (For reference only, please check.)
IMDG: TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S. (For reference only, please check.)
IATA: TOXIC SOLID, CORROSIVE, ORGANIC, 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

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/

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