

## 1 Identification

### Product identifier

**Product name:** Di-n-butyltin dichloride

**Stock number:** A17645

**CAS Number:**

683-18-1

**EC number:**

211-670-0

**Index number:**

050-022-00-X

**Relevant identified uses of the substance or mixture and uses advised against.**

**Identified use:** SU24 Scientific research and development

### Details of the supplier of the safety data sheet

#### Manufacturer/Supplier:

Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757  
Email: tech@alfa.com  
www.alfa.com

**Information Department:** Health, Safety and Environmental Department

#### Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

### Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

Muta. 2 H341 Suspected of causing genetic defects.

Repr. 1B H360 May damage fertility or the unborn child.

STOT RE 1 H372 Causes damage to the liver, the brain, the endocrine system and the immune system through prolonged or repeated exposure. Route of exposure: Oral.



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.



GHS07

Acute Tox. 4 H312 Harmful in contact with skin.

**Hazards not otherwise classified** No information known.

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

### Hazard pictograms



GHS05 GHS06 GHS08

### Signal word

**Danger**

### Hazard statements

H301 Toxic if swallowed.

H312 Harmful in contact with skin.

H330 Fatal if inhaled.

H314 Causes severe skin burns and eye damage.

H341 Suspected of causing genetic defects.

H360 May damage fertility or the unborn child.

H372 Causes damage to the liver, the brain, the endocrine system and the immune system through prolonged or repeated exposure. Route of exposure: Oral.

### Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects

E - Corrosive material



<b>Product name: Di-n-butyltin dichloride</b>	
<div><div><div>HEALTH</div><div>FIRE</div><div>REACTIVITY</div></div><div><div>3</div><div>1</div><div>1</div></div></div> <div>Health (acute effects) = 3 Flammability = 1 Physical Hazard = 1</div>	(Contd. of page 1)
<div><div><div><b>Classification system</b> <b>HMIS ratings (scale 0-4)</b> <b>(Hazardous Materials Identification System)</b></div><div><b>Other hazards</b> <b>Results of PBT and vPvB assessment</b> <b>PBT:</b> Not applicable. <b>vPvB:</b> Not applicable.</div></div></div>	
<b>3 Composition/information on ingredients</b> <div><div><b>Chemical characterization: Substances</b> <b>CAS# Description:</b> 683-18-1 Di-n-butyltin dichloride <b>Identification number(s):</b> <b>EC number:</b> 211-670-0 <b>Index number:</b> 050-022-00-X</div></div>	
<b>4 First-aid measures</b> <div><div><b>Description of first aid measures</b> <b>General information</b> Immediately remove any clothing soiled by the product. Remove breathing apparatus only after contaminated clothing has been completely removed. In case of irregular breathing or respiratory arrest provide artificial respiration. <b>After inhalation</b> Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice. <b>After skin contact</b> Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice. <b>After eye contact</b> Rinse opened eye for several minutes under running water. Then consult a doctor. <b>After swallowing</b> Do not induce vomiting; immediately call for medical help. <b>Information for doctor</b> <b>Most important symptoms and effects, both acute and delayed</b> Causes severe skin burns. Causes serious eye damage. <b>Indication of any immediate medical attention and special treatment needed</b> No further relevant information available.</div></div>	
<b>5 Fire-fighting measures</b> <div><div><b>Extinguishing media</b> <b>Suitable extinguishing agents</b> Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. <b>Special hazards arising from the substance or mixture</b> If this product is involved in a fire, the following can be released: Carbon monoxide and carbon dioxide Hydrogen chloride (HCl) Tin oxides <b>Advice for firefighters</b> <b>Protective equipment:</b> Wear self-contained respirator. Wear fully protective impervious suit.</div></div>	
<b>6 Accidental release measures</b> <div><div><b>Personal precautions, protective equipment and emergency procedures</b> Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation <b>Environmental precautions:</b> Do not allow product to reach sewage system or any water course. <b>Methods and material for containment and cleaning up:</b> Use neutralizing agent. Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation. <b>Prevention of secondary hazards:</b> No special measures required. <b>Reference to other sections</b> See Section 7 for information on safe handling See Section 8 for information on personal protection equipment. See Section 13 for disposal information.</div></div>	
<b>7 Handling and storage</b> <div><div><b>Handling</b> <b>Precautions for safe handling</b> Handle under dry protective gas. Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Open and handle container with care. <b>Information about protection against explosions and fires:</b> No information known. <b>Conditions for safe storage, including any incompatibilities</b> <b>Storage</b> <b>Requirements to be met by storerooms and receptacles:</b> No special requirements. <b>Information about storage in one common storage facility:</b> Store away from water/moisture. Store away from oxidizing agents. <b>Further information about storage conditions:</b> Store under dry inert gas. This product is moisture sensitive. Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Protect from humidity and water.</div></div>	(Contd. on page 3)

Product name: <b>Di-n-butyltin dichloride</b>	
Specific end use(s) No further relevant information available.	
(Contd. of page 2)	
<b>8 Exposure controls/personal protection</b>	
<b>Additional information about design of technical systems:</b> Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.	
<b>Control parameters</b>	
<b>Components with limit values that require monitoring at the workplace:</b>	
<b>683-18-1 Di-n-butyltin dichloride (100.0%)</b>	
PEL (USA)	Long-term value: 0.1 mg/m <sup>3</sup> as Sn
REL (USA)	Long-term value: 0.1 mg/m <sup>3</sup> as Sn, Skin
TLV (USA)	Short-term value: 0.2 mg/m <sup>3</sup> Long-term value: 0.1 mg/m <sup>3</sup> as Sn; Skin
EL (Canada)	Short-term value: 0.2 mg/m <sup>3</sup> Long-term value: 0.1 mg/m <sup>3</sup> as Sn; Skin
EV (Canada)	Long-term value: 0.1 mg/m <sup>3</sup> as Sn, Skin
<b>Additional information:</b> No data	
<b>Exposure controls</b>	
<b>Personal protective equipment</b>	
<b>General protective and hygienic measures</b>	
The usual precautionary measures for handling chemicals should be followed.	
Keep away from foodstuffs, beverages and feed.	
Remove all soiled and contaminated clothing immediately.	
Wash hands before breaks and at the end of work.	
Store protective clothing separately.	
Avoid contact with the eyes and skin.	
Maintain an ergonomically appropriate working environment.	
<b>Breathing equipment:</b> Use self-contained respiratory protective device in emergency situations.	
<b>Recommended filter device for short term use:</b>	
Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.	
<b>Protection of hands:</b>	
Impervious gloves	
Check protective gloves prior to each use for their proper condition.	
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.	
<b>Material of gloves</b> Nitrile rubber, NBR	
<b>Penetration time of glove material (in minutes)</b> Not determined	
<b>Eye protection:</b>	
Tightly sealed goggles	
Full face protection	
<b>Body protection:</b> Protective work clothing.	
<b>9 Physical and chemical properties</b>	
<b>Information on basic physical and chemical properties</b>	
<b>General Information</b>	
<b>Appearance:</b>	
Form:	Crystalline
Color:	White
Odor:	Acrid
Odor threshold:	Not determined.
pH-value:	Not applicable.
<b>Change in condition</b>	
Melting point/Melting range:	39-41 °C (102-106 °F)
Boiling point/Boiling range:	135 °C (275 °F) (10mm)
Sublimation temperature / start:	Not determined
Flash point:	168 °C (334 °F)
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Not determined.
<b>Danger of explosion:</b>	
Not determined.	
<b>Explosion limits:</b>	
Lower:	Not determined
Upper:	Not determined
Vapor pressure at 100 °C (212 °F):	2.6 hPa (2 mm Hg)
Density at 20 °C (68 °F):	1.36 g/cm <sup>3</sup> (11.349 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
<b>Solubility in / Miscibility with</b>	
Water:	Hydrolyzes
<b>Partition coefficient (n-octanol/water):</b> Not determined.	
<b>Viscosity:</b>	
dynamic:	Not applicable.
kinematic:	Not applicable.
<b>Other information</b> No further relevant information available.	
<b>10 Stability and reactivity</b>	
<b>Reactivity</b> No information known.	
<b>Chemical stability</b> Stable under recommended storage conditions.	
<b>Thermal decomposition / conditions to be avoided:</b> Decomposition will not occur if used and stored according to specifications.	
<b>Possibility of hazardous reactions</b> Reacts with strong oxidizing agents	
(Contd. on page 4)	

Product name: **Di-n-butyltin dichloride**

**Conditions to avoid** No further relevant information available.

**Incompatible materials:**

Water/moisture  
Oxidizing agents

**Hazardous decomposition products:**

Carbon monoxide and carbon dioxide  
Hydrogen chloride (HCl)  
Tin oxides

(Contd. of page 3)

**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**

Harmful in contact with skin.  
Fatal if inhaled.  
Toxic if swallowed.  
Danger through skin absorption.  
Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

**LD/LC50 values that are relevant for classification:**

Oral LD50 50 mg/kg (rat)

**Skin irritation or corrosion:** Causes severe skin burns.

**Eye irritation or corrosion:** Causes serious eye damage.

**Sensitization:** No sensitizing effects known.

**Germ cell mutagenicity:**

Suspected of causing genetic defects.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

**Carcinogenicity:**

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

**Reproductive toxicity:**

May damage fertility or the unborn child.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.

**Specific target organ system toxicity - repeated exposure:**

Causes damage to the liver, the brain, the endocrine system and the immune system through prolonged or repeated exposure. Route of exposure: Oral.

**Specific target organ system toxicity - single exposure:** No effects known.

**Aspiration hazard:** No effects known.

**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**12 Ecological information**

**Toxicity**

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability** No further relevant information available.

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

**Ecotoxicological effects:**

**Remark:** Very toxic for aquatic organisms

**Additional ecological information:**

**General notes:**

Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

May cause long lasting harmful effects to aquatic life.

Avoid transfer into the environment.

Very toxic for aquatic organisms

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

**13 Disposal considerations**

**Waste treatment methods**

**Recommendation** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

**UN-Number**

DOT, IMDG, IATA

UN2928

**UN proper shipping name**

DOT

IMDG

Toxic solids, corrosive, organic, n.o.s. (Di-n-butyltin dichloride)  
TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S. (Di-n-butyltin dichloride),  
MARINE POLLUTANT  
TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S. (Di-n-butyltin dichloride)

IATA

**Transport hazard class(es)**

DOT



**Class**

**Label**

**Class**

**Label**

6.1 Toxic substances.

6.1+8

6.1 (TC2) Toxic substances

6.1+8

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USA

**Product name:** *Di-n-butyltin dichloride*

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**IMDG**



**Class  
Label  
IATA**

6.1 Toxic substances.  
6.1+8



**Class  
Label**

6.1 Toxic substances.  
6.1+8

**Packing group  
DOT, IMDG, IATA**

II

**Environmental hazards:  
Marine pollutant (IMDG):**

Environmentally hazardous substance, solid; Marine Pollutant  
Symbol (fish and tree)

**Special precautions for user  
EMS Number:**

Warning: Toxic substances  
F-A, S-B

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

**Transport/Additional information:**

**DOT**

**Marine Pollutant (DOT):**

No

**UN "Model Regulation":**

UN2928, Toxic solids, corrosive, organic, n.o.s. (Di-n-butyltin dichloride), 6.1 (8), II

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

**Hazard pictograms**



GHS05 GHS06 GHS08

**Signal word** Danger

**Hazard statements**

H301 Toxic if swallowed.

H312 Harmful in contact with skin.

H330 Fatal if inhaled.

H314 Causes severe skin burns and eye damage.

H341 Suspected of causing genetic defects.

H360 May damage fertility or the unborn child.

H372 Causes damage to the liver, the brain, the endocrine system and the immune system through prolonged or repeated exposure. Route of exposure: Oral.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

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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).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

**SARA Section 313 (specific toxic chemical listings)** Substance is not listed.

**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer** Substance is not listed.

**Prop 65 - Developmental toxicity** Substance is not listed.

**Prop 65 - Developmental toxicity, female** Substance is not listed.

**Prop 65 - Developmental toxicity, male** Substance is not listed.

**Information about limitation of use:** For use only by technically qualified individuals.

**Other regulations, limitations and prohibitive regulations**

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.**

This substance is included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH).

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department

**Date of preparation / last revision** 11/23/2015 / -

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

(Contd. on page 6)

USA



Product name: <b>Di-n-butyltin dichloride</b>	
<div>NTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)</div>	<div>(Contd. of page 5)</div> <div>USA</div>