

## 1 Identification

### Product identifier

**Product name:** Tri-n-butyltin bromide

**Stock number:** 71185

**CAS Number:**  
1461-23-0

**EC number:**  
215-959-2

**Index number:**  
050-008-00-3

**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.



GHS08 Health hazard

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



GHS07

Acute Tox. 4 H312 Harmful in contact with skin.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

**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



GHS06 GHS08

### Signal word

**Danger**

### Hazard statements

H301 Toxic if swallowed.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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

### Precautionary statements

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

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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



### Classification system

#### HMIS ratings (scale 0-4)

#### (Hazardous Materials Identification System)

HEALTH	2	Health (acute effects) = 2
FIRE	1	Flammability = 1
REACTIVITY	1	Physical Hazard = 1

### Other hazards

#### Results of PBT and vPvB assessment

**PBT:** Not applicable.

<b>Product name:</b> <b>Tri-n-butyltin bromide</b>	
<b>vPvB:</b> Not applicable.	(Contd. of page 1)
<b>3 Composition/information on ingredients</b> <b>Chemical characterization:</b> Substances <b>CAS# Description:</b> 1461-23-0 Tri-n-butyltin bromide <b>Identification number(s):</b> <b>EC number:</b> 215-959-2 <b>Index number:</b> 050-008-00-3	
<b>4 First-aid measures</b> <b>Description of first aid measures</b> <b>General information</b> Immediately remove any clothing soiled by the product. 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> No further relevant information available. <b>Indication of any immediate medical attention and special treatment needed</b> No further relevant information available.	
<b>5 Fire-fighting measures</b> <b>Extinguishing media</b> <b>Suitable extinguishing agents</b> Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers. <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 bromide (HBr) Metal oxide fume <b>Advice for firefighters</b> <b>Protective equipment:</b> Wear self-contained respirator. Wear fully protective impervious suit.	
<b>6 Accidental release measures</b> <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 material to be released to the environment without proper governmental permits. <b>Methods and material for containment and cleaning up:</b> Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose of contaminated material as waste according to section 13. <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.	
<b>7 Handling and storage</b> <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. <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 oxidizing agents. Store away from water/moisture. <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. <b>Specific end use(s)</b> No further relevant information available.	
<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>Components with limit values that require monitoring at the workplace:</b>  Tin, organic compounds, as Sn mg/m3 ACGIH TLV 0.1; 0.2-STEL (skin) Not classified as a human carcinogen Austria MAK 0.1 (skin) Belgium TWA 0.1 (skin) Denmark TWA 0.1 (skin) France VME 0.1; 0.2-VLE Germany MAK 0.1 (skin)	

Product name: **Tri-n-butyltin bromide**

Hungary 0.1-STEL (skin)  
Netherlands MAC-TGG 0.1; 0.2-MAC-K (skin)  
Norway TWA 0.1  
Switzerland MAK-W 0.1; 0.2-KZG-W (skin)  
United Kingdom 0.1; 0.2-STEL (skin)  
USA PEL 0.1

(Contd. of page 2)

**Control parameters**  
**Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.  
**Additional information:** No data

**Exposure controls**  
**Personal protective equipment**  
**General protective and hygienic measures**  
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.  
Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working environment.  
**Breathing equipment:** Use suitable respirator when high concentrations are present.  
**Protection of hands:**  
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.  
**Eye protection:** Safety glasses  
**Body protection:** Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Liquid  
Color: Colorless  
Odor: Not determined  
Odor threshold: Not determined.

pH-value: Not determined.

Change in condition

Melting point/Melting range: Not determined  
Boiling point/Boiling range: 163 °C (325 °F) (12mm Hg)  
Sublimation temperature / start: Not determined

Flash point: > 120 °C (> 248 °F)  
Flammability (solid, gaseous): Not determined.  
Ignition temperature: Not determined  
Decomposition temperature: Not determined  
Auto igniting: Not determined.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower: Not determined  
Upper: Not determined  
Vapor pressure: Not determined  
Density at 20 °C (68 °F): 1,338 g/cm³ (11.166 lbs/gal)  
Relative density: Not determined.  
Vapor density: Not determined.  
Evaporation rate: Not determined.  
Solubility in / Miscibility with  
Water: Not miscible or difficult to mix  
Partition coefficient (n-octanol/water): Not determined.  
Viscosity:  
dynamic: Not determined.  
kinematic: Not determined.  
Other information: No further relevant information available.

10 Stability and reactivity

**Reactivity** No information known.  
**Chemical stability** Stable under recommended storage conditions.  
**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.  
**Possibility of hazardous reactions** No dangerous reactions known  
**Conditions to avoid** No further relevant information available.  
**Incompatible materials:**  
Oxidizing agents  
Water/moisture  
**Hazardous decomposition products:**  
Carbon monoxide and carbon dioxide  
Hydrogen bromide  
Metal oxide fume

11 Toxicological information

Information on toxicological effects

Acute toxicity:

Harmful in contact with skin.  
Toxic if swallowed.  
Danger through skin absorption.

LD/LC50 values that are relevant for classification:

Oral	LD50	96 mg/kg (mouse) 138 mg/kg (rat) 100 µg/kg (rabbit)
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(Contd. on page 4)  
USA

Product name: **Tri-n-butyltin bromide**

			(Contd. of page 3)
Inhalative	LC50	13 mg/m3 (rat)	
	LCLo/10M	1030 mg/m3 (mouse)	
<p><b>Skin irritation or corrosion:</b> Causes skin irritation. <b>Eye irritation or corrosion:</b> Causes serious eye irritation. <b>Sensitization:</b> No sensitizing effects known. <b>Germ cell mutagenicity:</b> No effects known. <b>Carcinogenicity:</b> 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. <b>Reproductive toxicity:</b> No effects known. <b>Specific target organ system toxicity - repeated exposure:</b> Causes damage to the kidneys, the liver, the respiratory system, the blood, the endocrine system and the immune system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative. <b>Specific target organ system toxicity - single exposure:</b> No effects known. <b>Aspiration hazard:</b> No effects known. <b>Subacute to chronic toxicity:</b> Inorganic bromides may produce depression, emaciation and in severe cases, psychosis and mental deterioration. Bromoderma, a bromide rash, often occurs when bromide inhalation or administration is prolonged. This rash is usually found on the face and resembles acne and furunculosis. <b>Subacute to chronic toxicity:</b> The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals: Behavioral - somnolence (general depressed activity). Behavioral - convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration - structural or functional change in trachea or bronchi. Lungs, Thorax, or Respiration - dyspnea. Brain and Coverings - other degenerative changes. Nutritional and Gross Metabolic - weight loss or decreased weight gain. Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - phosphatases. Related to Chronic Data - death. Blood - hemorrhage. Sense Organs and Special Senses (Eye) - lacrimation. <b>Subacute to chronic toxicity:</b> Organic tin compounds are generally more toxic than inorganic tin. Exposure may result in brain and central nervous system swelling, muscle weakness, paralysis, respiratory failure, neurological disturbances, liver damage, urinary tract injury and blood injury. Excessive exposure may be fatal. <b>Additional toxicological information:</b> To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.</p>			



12 Ecological information

<p><b>Toxicity</b> <b>Aquatic toxicity:</b> No further relevant information available. <b>Persistence and degradability</b> No further relevant information available. <b>Bioaccumulative potential</b> No further relevant information available. <b>Mobility in soil</b> No further relevant information available. <b>Ecotoxical effects:</b> <b>Remark:</b> Very toxic for aquatic organisms <b>Additional ecological information:</b> <b>General notes:</b> Do not allow material to be released to the environment without proper governmental permits. 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 <b>Results of PBT and vPvB assessment</b> <b>PBT:</b> Not applicable. <b>vPvB:</b> Not applicable. <b>Other adverse effects</b> No further relevant information available.</p>
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13 Disposal considerations

<p><b>Waste treatment methods</b> <b>Recommendation</b> Consult state, local or national regulations to ensure proper disposal. <b>Uncleaned packagings:</b> <b>Recommendation:</b> Disposal must be made according to official regulations.</p>
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14 Transport information

<b>UN-Number</b> <b>DOT, IMDG, IATA</b>	UN2788
<b>UN proper shipping name</b> <b>DOT</b> <b>IMDG, IATA</b>	Organotin compounds, liquid, n.o.s. (Tri-n-butyltin bromide) ORGANOTIN COMPOUND, LIQUID, N.O.S. (Tri-n-butyltin bromide)
<b>Transport hazard class(es)</b> <b>DOT</b> 	
<b>Class</b> <b>Label</b> <b>Class</b> <b>Label</b> <b>IMDG, IATA</b> 	6.1 Toxic substances. 6.1 6.1 (T3) Toxic substances 6.1
<b>Class</b> <b>Label</b>	6.1 Toxic substances. 6.1
<b>Packing group</b> <b>DOT, IMDG, IATA</b>	II

<b>Product name:</b> <i>Tri-n-butyltin bromide</i>	
(Contd. of page 4)	
<b>Environmental hazards:</b>	Environmentally hazardous substance, liquid
<b>Special precautions for user</b>	Warning: Toxic substances
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> Not applicable.	
<b>Transport/Additional information:</b>	
<b>DOT</b>	
<b>Marine Pollutant (DOT):</b>	No
<b>UN "Model Regulation":</b>	UN2788, Organotin compounds, liquid, n.o.s. (Tri-n-butyltin bromide), 6.1, 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**



GHS06 GHS08

**Signal word** *Danger*  
**Hazard statements**  
H301 Toxic if swallowed.  
H312 Harmful in contact with skin.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H372 Causes damage to the kidneys, the liver, the respiratory system, the blood, the endocrine system and the immune system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

**Precautionary statements**  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations**  
This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only. This product must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.  
**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.** Substance is not listed.  
**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 Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
HMIS: 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)  
NTP: National Toxicology Program (USA)  
IARC: International Agency for Research on Cancer  
EPA: Environmental Protection Agency (USA)