

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 13.07.2010

Revision: 13.07.2010

1 Identification of substance

Product details

Trade name

Tri-n-butyltin fluoride

Stock number:

39602

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG
Benzstrasse 3
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com
www.alfa-chemcat.com

Informing department:

Product safety department.

Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telefon: +49(0)6131/19240

2 Hazards identification

Hazard designation:



T Toxic

N Dangerous for the environment

Information pertaining to particular dangers for man and environment

R 21 Harmful in contact with skin.
 R 25 Toxic if swallowed.
 R 36/38 Irritating to eyes and skin.
 R 48/23/25 Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
 R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

GHS label elements

**Danger**

H301 - Toxic if swallowed.

**Danger**

H372 - Causes damage to organs through prolonged or repeated exposure.

**Warning**

H400 - Very toxic to aquatic life.
 H410 - Very toxic to aquatic life with long lasting effects.

Warning

H312 - Harmful in contact with skin.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

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

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

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

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.

Prevention:

Response:

Storage:

Disposal:

3 Composition/information on ingredients

Chemical characterization:

Tri-n-butyltin fluoride (CAS# 1983-10-4), 100%

Designation: (CAS#)

Identification number(s):

217-847-9

EINECS Number:

050-008-00-3

Index number:

4 First aid measures

General information

Instantly remove any clothing soiled by the product.

After inhalation

In case of irregular breathing or respiratory arrest provide artificial respiration.

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rub in Ca-gluconate solution or Ca-gluconate gel immediately.

Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing

Do not induce vomiting; instantly call for medical help.

Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

Special hazards caused by the material, its products of combustion or flue gases:

Can be released in case of fire:

Hydrogen fluoride (HF)

Metal oxide

Carbon monoxide and carbon dioxide

Wear self-contained breathing apparatus.

Wear full protective suit.

Protective equipment:

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Do not allow material to be released to the environment without proper governmental permits.

Dispose of contaminated material as waste according to item 13.

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

Measures for environmental protection:

Measures for cleaning/collecting:

Additional information:

7 Handling and storage

Handling

Information for safe handling:

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect from heat.

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Storage Requirements to be met by storerooms and containers:
Information about storage in one common storage facility:
Further information about storage conditions:

Unsuitable material for container: ceramic, glass

Do not store together with oxidizing and acidic materials.

Keep container tightly sealed.
 Store in cool, dry conditions in well sealed containers.
 Store in a locked cabinet or with access restricted to technical experts or their assistants.

8 Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with critical values that require monitoring at the workplace:

Tin, organic compounds, as Sn
 mg/m³

ACGIH TLV 0.1; 0.2-STEL (skin)
 Not classifiable as a human carcinogen

Austria MAK 0.1 (skin)
 Belgium TWA 0.1 (skin)
 Denmark TWA 0.1 (skin)
 Finland TWA 0.1; 0.3-STEL (skin)
 France VME 0.1
 Germany MAK 0.1 (skin)
 Hungary 0.1-STEL (skin)
 Korea TLV 0.1; 0.2-STEL (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

Fluorides (as F)
 mg/m³

ACGIH TLV 2.5
 Austria MAK 2.5
 Belgium TWA 2.5
 Finland TWA 2.5
 France TWA 2.5
 Germany MAK 2.5
 Hungary TWA 1; 2-STEL
 Netherlands MAC-K 3.5
 Norway TWA 0.6
 Poland TWA 1; 3-STEL
 Sweden NGV 2
 Switzerland MAK-W 1.5; 3-KZG-W
 United Kingdom TWA 2.5
 Russia TWA 2
 Denmark TWA 2.5
 USA PEL 2.5
 No data

Additional information:

Personal protective equipment
General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.
 Keep away from foodstuffs, beverages and food.
 Instantly remove any soiled and impregnated garments.
 Wash hands during breaks and at the end of the work.
 Avoid contact with the eyes and skin.
 Use breathing protection with high concentrations.
 Safety glasses
 Face protection
 Protective work clothing.

Breathing equipment:

Eye protection:

Body protection:

9 Physical and chemical properties:

General Information

Form: Powder
Colour: White
Smell: Pungent

Change in condition
Melting point/Melting range: 248-252°C
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined

Flash point: 145°C

Ignition temperature: Not determined

Decomposition temperature: Not determined

Danger of explosion: Product is not explosive.

Critical values for explosion:
Lower: Not determined
Upper: Not determined

Steam pressure: Not determined

Density at 20°C 1.27 g/cm³

Solubility in / Miscibility with Water: Insoluble

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Materials to be avoided:

No decomposition if used and stored according to specifications.
 Acids
 Oxidizing agents
 No dangerous reactions known

Dangerous reactions:

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Dangerous products of decomposition: Hydrogen fluoride
Metal oxide
Carbon monoxide and carbon dioxide

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11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:

Oral	LDLo	320 mg/kg (mouse)
		50 mg/kg (rabbit)

Primary irritant effect:

on the skin:

on the eye:

Sensitization:

Other information (about experimental toxicology):

Additional toxicological information:

Irritant for skin and mucous membranes.

Irritant effect.

No sensitizing effect known.

Mutagenic effects have been observed on tests with laboratory animals.

Danger by skin resorption.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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.

12 Ecological information:

Ecotoxic effects:

Remark:

Additional ecological information:

General notes:

Very toxic for fish

Water danger class 3 (Self-assessment): extremely hazardous for water.

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into soil.

Also poisonous for fish and plankton in water bodies.

Do not allow material to be released to the environment without proper governmental permits.

Very toxic for aquatic organisms

13 Disposal considerations

Product:

Recommendation

Consult state, local or national regulations for proper disposal.

Hand over to disposers of hazardous waste.

Must be specially treated under adherence to official regulations.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

14 Transport information

Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)



ADR/RID-GGVS/E Class:

6.1 (T3) Toxic substances.

Kemler Number:

60

UN-Number:

3146

Packaging group:

III

Label

6.1

Special marking:

Symbol (fish and tree)

Designation of goods:

3146 ORGANOTIN COMPOUND, SOLID, N.O.S. (Tri-n-butyltin fluoride)

Limited quantities (LQ)

LQ9

Transport category

2

Tunnel restriction code

E

Maritime transport IMDG/GGVSea:



IMDG/GGVSea Class:

6.1

UN Number:

3146

Label

6.1

Packaging group:

III

Marine pollutant:

No

Correct technical name:

ORGANOTIN COMPOUND, SOLID, N.O.S. (Tri-n-butyltin fluoride)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class:

6.1

UN/ID Number:

3146

Label

6.1

Packaging group:

III

Correct technical name:

ORGANOTIN COMPOUND, SOLID, N.O.S. (Tri-n-butyltin fluoride)

UN "Model Regulation":

UN3146, ORGANOTIN COMPOUND, SOLID, N.O.S., 6.1, III

Environmental hazards:

Environmentally hazardous substance, solid; Marine Pollutant

15 Regulatory information

Designation according to EC guidelines:

Code letter and hazard designation of product:



T Toxic

N Dangerous for the environment

Risk phrases:

21 Harmful in contact with skin.

25 Toxic if swallowed.

36/38 Irritating to eyes and skin.

48/23/25 Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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Safety phrases:	35 This material and its container must be disposed of in a safe way. 36/37/39 Wear suitable protective clothing, gloves and eye/face protection. 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). 60 This material and its container must be disposed of as hazardous waste. 61 Avoid release to the environment. Refer to special instructions/safety data sheets.
National regulations	
Information about limitation of use:	Employment restrictions concerning young persons must be observed. For use only by technically qualified individuals.
Water hazard class:	Water danger class 3 (Self-assessment): extremely hazardous for water.

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 data specification sheet: Health, Safety and Environmental Department.**Contact:** Zachariah Holt

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)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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