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

1.1. Product identifier

Product form : Substance
Physical state : Liquid
Substance name : n-BUTYLTRICHLOROTIN
Product code : SNB2000
Formula : C4H9Cl3Sn
Synonyms : BUTYLTRICHLORIDE; N-BUTYLTRICHLOROSTANNANE; MONOBUTYL Tin TRICHLORIDE; STANNANE, BUTYLTRICHLORO-

Chemical family : TIN COMPOUND

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

1.2.1. Relevant identified uses
Use of the substance/mixture : Chemical intermediate

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelestde.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Skin corrosion/irritation, Category 1B H314
Serious eye damage/eye irritation, Category 1 H318
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation H335
Hazardous to the aquatic environment — Acute Hazard, Category 1 H400
Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

Signal word (CLP) : Danger

Print date: 11/04/2019 EN (English) SDS ID: SNB2000 1/9
n-BUTYLTRICHLOROTIN
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Hazard statements (CLP):
- H314 - Causes severe skin burns and eye damage.
- H335 - May cause respiratory irritation.
- H400 - Very toxic to aquatic life.

Precautionary statements (CLP):
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P260 - Do not breathe vapours.
- P264 - Wash hands thoroughly after handling.
- P271 - Use only outdoors or in a well-ventilated area.
- P273 - Avoid release to the environment.
- P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances
Substance type: Mono-constituent
Name: n-BUTYLTRICHLOROTIN
CAS-No.: 1118-46-3
EC-No.: 214-263-6

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Butyltrichlorotin</td>
<td>(CAS-No.) 1118-46-3</td>
<td>95</td>
<td>Skin Corr. 1B, H314, Eye Dam. 1, H318, STOT SE 3, H335, Aquatic Acute 1, H400</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 214-263-6</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If not available show packaging or label.

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of water/…. Get immediate medical advice/attention.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects: Causes severe skin burns and eye damage.
Symptoms/effects after inhalation: May cause respiratory irritation.
Symptoms/effects after skin contact: Causes (severe) skin burns. Organotins may be absorbed through the skin.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed
Note to physician: Application of corticosteroid creams has been effective in treating severe skin irritation. If blisters develop, they may require abrasion to promote healing.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Unsuitable extinguishing media: Do not use straight streams.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.
5.3. Advice for firefighters

Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment: Wear protective equipment as described in Section 8.

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8. “Exposure controls/personal protection”.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Collect spillage.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapour and mist. Use only outdoors or in a well-ventilated area.

Hygiene measures: Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Keep container tightly closed. Store locked up.


Storage area: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>n-Butyltrichlorotin (1118-46-3)</th>
<th>ACGIH TWA (mg/m³)</th>
<th>0.1 mg/m³ as tin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy - Portugal - USA ACGIH</td>
<td>ACGIH STEL (mg/m³)</td>
<td>0.2 mg/m³ as tin (skin)</td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>0.1 mg/m³ as tin</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls:
Provide local exhaust or general room ventilation.

Personal protective equipment:
Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:
Neoprene or nitrile rubber gloves

Eye protection:
Chemical goggles or face shield. Contact lenses should not be worn

Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor/acid gas (yellow cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
- Physical state: Liquid
- Appearance: Clear liquid.
- Molecular mass: 282.17 g/mol
- Colour: Straw.
- Odour: Irritating.
- Odour threshold: No data available
- Refractive index: 1.5229
- pH: No data available
- Relative evaporation rate (butylacetate=1): No data available
- Melting point: No data available
- Freezing point: -63 °C
- Boiling point: 93 °C @ 10 mm Hg
- Flash point: > 110 °C
- Auto-ignition temperature: No data available
- Decomposition temperature: No data available
- Flammability (solid, gas): No data available
- Vapour pressure: < 1 mm Hg @ 20°C
- Relative vapour density at 20 °C: > 1
- Relative density: 1.693
- Solubility: Slightly. Soluble in water.
- Log Pow: No data available
- Log Kow: No data available
- Viscosity, kinematic: No data available
- Viscosity, dynamic: No data available
- Explosive properties: No data available
- Oxidising properties: No data available
- Explosive limits: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Direct sunlight causes slow degradation to an inorganic tin salt.

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Organic acid vapors. Tin oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified

n-Butyltrichlorotin (1118-46-3)
- LD50 oral rat: 2140 mg/kg
- ATE CLP (oral): 2140 mg/kg bodyweight
Skin corrosion/irritation: Causes severe skin burns and eye damage.

Skin irritation - rabbit: 750 ug/24H: severe irritation effect

Serious eye damage/irritation: Causes serious eye damage.

Eye irritation - rabbit: 50 ug/24H: severe irritation effect

Respiratory or skin sensitisation: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

Reproductive toxicity: Not classified

STOT - single exposure: May cause respiratory irritation.

STOT - repeated exposure: Not classified

Aspiration hazard: Not classified

Symptoms/effects after inhalation: May cause respiratory irritation.

Symptoms/effects after skin contact: Causes (severe) skin burns. Organotins may be absorbed through the skin.

Symptoms/effects after eye contact: Causes serious eye damage.

Symptoms/effects after ingestion: May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: Very toxic to aquatic life.

Acute aquatic toxicity: Very toxic to aquatic life.

Chronic aquatic toxicity: Not classified

**n-Butyltrichlorotin (1118-46-3)**

<table>
<thead>
<tr>
<th>Test</th>
<th>Concentration</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>&gt; 100 mg/l</td>
<td>Danio rerio (Zebra fish)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>83 mg/l</td>
<td>Daphnia magna (water flea)</td>
</tr>
<tr>
<td>ErC50 (algae)</td>
<td>0.31 mg/l</td>
<td>Scenedesmus subspicatus</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations: Do not dispose of waste into sewer.

Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.

Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 3265
UN-No. (IMDG) : 3265
UN-No. (IATA) : 3265
UN-No. (ADN) : 3265
UN-No. (RID) : 3265
14.2. UN proper shipping name

- **Proper Shipping Name (ADR):** CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
- **Proper Shipping Name (IMDG):** CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
- **Proper Shipping Name (IATA):** Corrosive liquid, acidic, organic, n.o.s.
- **Proper Shipping Name (ADN):** CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
- **Proper Shipping Name (RID):** CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
- **Transport document description (ADR):** UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (n-BUTYLTRICHLOROTIN), 8, II, (E), ENVIRONMENTALLY HAZARDOUS
- **Transport document description (IMDG):** UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (n-BUTYLTRICHLOROTIN), 8, II, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS
- **Transport document description (IATA):** UN 3265 Corrosive liquid, acidic, organic, n.o.s. (n-BUTYLTRICHLOROTIN), 8, II, ENVIRONMENTALLY HAZARDOUS
- **Transport document description (ADN):** UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (n-BUTYLTRICHLOROTIN), 8, II, ENVIRONMENTALLY HAZARDOUS
- **Transport document description (RID):** UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (n-BUTYLTRICHLOROTIN), 8, II, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

**ADR**
- **Transport hazard class(es) (ADR):** 8
- **Danger labels (ADR):**
  - ☑️

**IMDG**
- **Transport hazard class(es) (IMDG):** 8
- **Danger labels (IMDG):**
  - ☑️

**IATA**
- **Transport hazard class(es) (IATA):** 8
- **Hazard labels (IATA):**
  - ☑️

**ADN**
- **Transport hazard class(es) (ADN):** 8
- **Danger labels (ADN):**
  - ☑️

**RID**
- **Transport hazard class(es) (RID):** 8
- **Danger labels (RID):**
  - ☑️
14.4. Packing group

<table>
<thead>
<tr>
<th>Packing group (ADR)</th>
<th>II</th>
</tr>
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<tbody>
<tr>
<td>Packing group (IMDG)</td>
<td>II</td>
</tr>
<tr>
<td>Packing group (IATA)</td>
<td>II</td>
</tr>
<tr>
<td>Packing group (ADN)</td>
<td>II</td>
</tr>
<tr>
<td>Packing group (RID)</td>
<td>II</td>
</tr>
</tbody>
</table>

14.5. Environmental hazards

| Dangerous for the environment | Yes |
| Marine pollutant               | Yes |
| Other information             | No supplementary information available |

14.6. Special precautions for user

- **Overland transport**
  - Classification code (ADR): C3
  - Special provisions (ADR): 274
  - Limited quantities (ADR): 1L
  - Excepted quantities (ADR): E2
  - Packing instructions (ADR): P001, IBC02
  - Mixed packing provisions (ADR): MP15
  - Portable tank and bulk container instructions (ADR): T11
  - Portable tank and bulk container special provisions (ADR): TP2, TP27
  - Tank code (ADR): L4BN
  - Vehicle for tank carriage: AT
  - Transport category (ADR): 2
  - Hazard identification number (Kemler No.): 80
  - Orange plates: 80 3265
  - Tunnel restriction code (ADR): E
  - EAC code: 2X
  - APP code: B

- **Transport by sea**
  - Special provisions (IMDG): 274
  - Limited quantities (IMDG): 1 L
  - Excepted quantities (IMDG): E2
  - Packing instructions (IMDG): P001
  - IBC packing instructions (IMDG): IBC02
  - Tank instructions (IMDG): T11
  - Tank special provisions (IMDG): TP2, TP27
  - EmS-No. (Fire): F-A
  - EmS-No. (Spillage): S-B
  - Stowage category (IMDG): B
  - Stowage and handling (IMDG): SW2
  - Properties and observations (IMDG): Causes burns to skin, eyes and mucous membranes.

- **Air transport**
  - PCA Excepted quantities (IATA): E2
  - PCA Limited quantities (IATA): Y840
  - PCA limited quantity max net quantity (IATA): 0.5L
  - PCA packing instructions (IATA): 851
n-BUTYLTRICHLOROTIN
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PCA max net quantity (IATA) : 1L
CAO packing instructions (IATA) : 855
CAO max net quantity (IATA) : 30L
Special provisions (IATA) : A3
ERG code (IATA) : 8L

- Inland waterway transport
  Classification code (ADN) : C3
  Special provisions (ADN) : 274
  Limited quantities (ADN) : 1 L
  Excepted quantities (ADN) : E2
  Carriage permitted (ADN) : T
  Equipment required (ADN) : PP, EP
  Number of blue cones/lights (ADN) : 0

- Rail transport
  Classification code (RID) : C3
  Special provisions (RID) : 274
  Limited quantities (RID) : 1L
  Excepted quantities (RID) : E2
  Packing instructions (RID) : P001, IBC02
  Mixed packing provisions (RID) : MP15
  Portable tank and bulk container instructions (RID) : T11
  Portable tank and bulk container special provisions (RID) : TP2, TP27
  Tank codes for RID tanks (RID) : L4BN
  Transport category (RID) : 2
  Colis express (express parcels) (RID) : CE6
  Hazard identification number (RID) : 80

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
n-BUTYLTRICHLOROTIN is not on the REACH Candidate List
n-BUTYLTRICHLOROTIN is not on the REACH Annex XIV List
n-BUTYLTRICHLOROTIN is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

15.1.2. National regulations

Germany
Reference to AwSV : Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to VwVwS, Annex 1 or 2; ID No. 579)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-limilatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limilatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-limilatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed
n-BUTYLTRICHLOROTIN
Safety Data Sheet

### Denmark
Danish National Regulations: Young people below the age of 18 years are not allowed to use the product

#### 15.2. Chemical safety assessment
No additional information available

### SECTION 16: Other information

<table>
<thead>
<tr>
<th>Abbreviations and acronyms:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor</td>
</tr>
</tbody>
</table>

Other information: Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Aquatic Acute 1</th>
<th>Hazardous to the aquatic environment — Acute Hazard, Category 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation, Category 1</td>
</tr>
<tr>
<td>Skin Corr. 1B</td>
<td>Skin corrosion/irritation, Category 1B</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity — Single exposure, Category 3. Respiratory tract irritation</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
</tbody>
</table>

SDS EU (REACH Annex II) - Custom

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

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