TRIBUTYLAMINE FOR SYNTHESIS MSDS

CAS No: 102-82-9 MSDS

MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier

Product form : Substance

EC no : 203-058-7
CAS No : 102-82-9
Product code : 6350D

Chemical structure : 

Synonyms : Tri-n-butylamine

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 : Laboratory chemicals, Manufacture of substances

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

LOBA CHEMIE PVT.LTD.
107 Wode House Road, Jehangir Villa, Colaba
400005 Mumbai - INDIA
T +91 22 6663 6663 - F +91 22 6663 6699
info@lobachemie.com - www.lobachemie.com

1.4. Emergency telephone number

Emergency number : + 91 22 6663 6663 (9:00am - 6:00 pm)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>H Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral), Category 4</td>
<td>H302</td>
</tr>
<tr>
<td>Acute toxicity (dermal), Category 3</td>
<td>H311</td>
</tr>
<tr>
<td>Acute toxicity (inhalation: vapour), Category 1</td>
<td>H330</td>
</tr>
<tr>
<td>Skin corrosion/irritation, Category 2</td>
<td>H315</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment — Chronic Hazard, Category 2</td>
<td>H411</td>
</tr>
</tbody>
</table>

Full text of classification categories and H statements : see section 16
TRIBUTYLAMINE FOR SYNTHESIS
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Classification according to Directive 67/548/EEC or 1999/45/EC
T; R23/24
Xn; R22
Xi; R38
Full text of R-phrases: 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):

GHS06  GHS09

Signal word (CLP): Danger

Hazard statements (CLP):
H302 - Harmful if swallowed
H311 - Toxic in contact with skin
H315 - Causes skin irritation
H330 - Fatal if inhaled
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (CLP):
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P284 - [In case of inadequate ventilation] wear respiratory protection
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. Substance

Name: TRIBUTYLAMINE FOR SYNTHESIS
CAS No: 102-82-9
EC no: 203-058-7

Full text of R- and H-phrases: see section 16

3.2. Mixture
Not applicable
SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Give oxygen or artificial respiration if necessary. If you feel unwell, seek medical advice.
First-aid measures after skin contact: Gently wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact: Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion: Rinse mouth out with water. If you feel unwell, seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries after inhalation: Fatal if inhaled.
Symptoms/injuries after skin contact: Toxic in contact with skin. Causes skin irritation.
Symptoms/injuries after ingestion: Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media: dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2).
Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture
No additional information available

5.3. Advice for firefighters
Protection during firefighting: Do not attempt to take action without suitable protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Use personal protective equipment as required.
Emergency procedures: Stop release.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

6.4. Reference to other sections
No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Do not get in eyes, on skin, or on clothing.
Hygiene measures: Do not eat, drink or smoke when using this product. Wash ... thoroughly after handling.
7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in original container. Keep container tightly closed. Store in a dry place. Protect from moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Hand protection: protective gloves
Eye protection: Chemical goggles or safety glasses
Skin and body protection: Wear suitable protective clothing
Respiratory protection: Wear respiratory protection

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Molecular mass: 185.36 g/mol
Colour: Pale yellow.
Odour: amine like.
Odour threshold: No data available
pH: 12
Relative evaporation rate (butylacetate=1): No data available
Melting point: -70 °C
Freezing point: No data available
Boiling point: 216.5 °C
Flash point: 63 °C
Auto-ignition temperature: 210 °C
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapour pressure: 0.3 mm Hg (at 20°C)
Relative vapour density at 20 °C: 6.38
Relative density: No data available
Density: 0.7782 g/cm³
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Solubility: Water: Sparingly soluble in water
Log Pow: 4.4 - 4.6
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidising properties: No data available
Explosive limits: 0.014 - 0.06 vol %

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 under normal conditions of use.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/irritation: Not classified
Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
Specific target organ toxicity (single exposure): Not classified
Specific target organ toxicity (repeated exposure): Not classified

Aspiration hazard: Not classified

Potential adverse human health effects and symptoms: Harmful if swallowed. Toxic in contact with skin.

SECTION 12: Ecological information

12.1. Toxicity
No additional information available

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
TRIBUTYLAMINE FOR SYNTHESIS (102-82-9)
Log Pow: 4.4 - 4.6

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
Product/Packaging disposal recommendations: Dispose of contents/container to ...
Ecology - waste materials: Hazardous waste due to toxicity.

SECTION 14: Transport information

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

14.1. UN number
UN-No. (ADR): 2542
UN-No. (IMDG): 2542
UN-No. (IATA): 2542
UN-No. (ADN): 2542
UN-No. (RID): 2542
14.2. UN proper shipping name

| Proper Shipping Name (ADR) | : TRIBUTYLAMINE |
| Proper Shipping Name (IMDG) | : TRIBUTYLAMINE |
| Proper Shipping Name (IATA) | : TRIBUTYLAMINE |
| Proper Shipping Name (ADN) | : TRIBUTYLAMINE |
| Proper Shipping Name (RID) | : TRIBUTYLAMINE |

14.3. Transport hazard class(es)

**ADR**
- Transport hazard class(es) (ADR) : 6.1
- Danger labels (ADR) : 6.1

**IMDG**
- Transport hazard class(es) (IMDG) : 6.1
- Danger labels (IMDG) : 6.1

**IATA**
- Transport hazard class(es) (IATA) : 6.1
- Hazard labels (IATA) : 6.1

**ADN**
- Transport hazard class(es) (ADN) : 6.1
- Danger labels (ADN) : 6.1

**RID**
- Transport hazard class(es) (RID) : 6.1
## TRIBUTYLAMINE FOR SYNTHESIS

### Safety Data Sheet

#### Danger labels (RID)

<table>
<thead>
<tr>
<th>Danger label</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td></td>
</tr>
</tbody>
</table>

![Danger label symbol](image)

#### 14.4. Packing group

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

#### 14.5. Environmental hazards

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dangerous for the environment</td>
<td>Yes</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Yes</td>
</tr>
<tr>
<td>Other information</td>
<td>No supplementary information available</td>
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</tbody>
</table>

#### 14.6. Special precautions for user

**- Overland transport**

<table>
<thead>
<tr>
<th>Item</th>
<th>Code</th>
</tr>
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<tbody>
<tr>
<td>Classification code (ADR)</td>
<td>T1</td>
</tr>
<tr>
<td>Limited quantities (ADR)</td>
<td>100ml</td>
</tr>
<tr>
<td>Excepted quantities (ADR)</td>
<td>E4</td>
</tr>
<tr>
<td>Packing instructions (ADR)</td>
<td>P001, IBC02</td>
</tr>
<tr>
<td>Mixed packing provisions (ADR)</td>
<td>MP15</td>
</tr>
<tr>
<td>Portable tank and bulk container instructions (ADR)</td>
<td>T7</td>
</tr>
<tr>
<td>Portable tank and bulk container special provisions (ADR)</td>
<td>TP2</td>
</tr>
<tr>
<td>Tank code (ADR)</td>
<td>L4BH</td>
</tr>
<tr>
<td>Tank special provisions (ADR)</td>
<td>TU15, TE19</td>
</tr>
<tr>
<td>Vehicle for tank carriage</td>
<td>AT</td>
</tr>
<tr>
<td>Transport category (ADR)</td>
<td>2</td>
</tr>
<tr>
<td>Special provisions for carriage - Loading, unloading and handling (ADR)</td>
<td>CV13, CV28</td>
</tr>
<tr>
<td>Special provisions for carriage - Operation (ADR)</td>
<td>S9, S19</td>
</tr>
<tr>
<td>Hazard identification number (Kemler No.)</td>
<td>60</td>
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<tr>
<td>Orange plates</td>
<td>60 2542</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tunnel restriction code (ADR)</td>
<td>D/E</td>
</tr>
<tr>
<td>EAC code</td>
<td>3X</td>
</tr>
</tbody>
</table>

**- Transport by sea**

<table>
<thead>
<tr>
<th>Item</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited quantities (IMDG)</td>
<td>100 ml</td>
</tr>
<tr>
<td>Excepted quantities (IMDG)</td>
<td>E4</td>
</tr>
<tr>
<td>Packing instructions (IMDG)</td>
<td>P001</td>
</tr>
<tr>
<td>IBC packing instructions (IMDG)</td>
<td>IBC02</td>
</tr>
<tr>
<td>Tank instructions (IMDG)</td>
<td>T7</td>
</tr>
<tr>
<td>Tank special provisions (IMDG)</td>
<td>TP2</td>
</tr>
<tr>
<td>EmS-No. (Fire)</td>
<td>F-A</td>
</tr>
</tbody>
</table>
## TRIBUTYLAMINE FOR SYNTHESIS
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**EmS-No. (Spillage)**: S-A  
**Stowage category (IMDG)**: A  
**MFAG-No**: 153

### Air transport
- **PCA Excepted quantities (IATA)**: E4  
- **PCA Limited quantities (IATA)**: Y641  
- **PCA limited quantity max net quantity (IATA)**: 1L  
- **PCA packing instructions (IATA)**: 654  
- **PCA max net quantity (IATA)**: 5L  
- **CAO packing instructions (IATA)**: 662  
- **CAO max net quantity (IATA)**: 60L  
- **ERG code (IATA)**: 6L

### Inland waterway transport
- **Classification code (ADN)**: T1  
- **Special provisions (ADN)**: 802  
- **Limited quantities (ADN)**: 100 ml  
- **Excepted quantities (ADN)**: E4  
- **Equipment required (ADN)**: PP, EP, TOX, A  
- **Ventilation (ADN)**: VE02  
- **Number of blue cones/lights (ADN)**: 2

### Rail transport
- **Classification code (RID)**: T1  
- **Limited quantities (RID)**: 100ml  
- **Excepted quantities (RID)**: E4  
- **Packing instructions (RID)**: P001, IBC02  
- **Mixed packing provisions (RID)**: MP15  
- **Portable tank and bulk container instructions (RID)**: T7  
- **Portable tank and bulk container special provisions (RID)**: TP2  
- **Tank codes for RID tanks (RID)**: L4BH  
- **Special provisions for RID tanks (RID)**: TU15  
- **Transport category (RID)**: 2  
- **Special provisions for carriage – Loading and unloading (RID)**: CW13, CW28, CW31  
- **Colis express (express parcels) (RID)**: CE5  
- **Hazard identification number (RID)**: 60

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 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  
TRIBUTYLAMINE FOR SYNTHESIS is not on the REACH Candidate List  
TRIBUTYLAMINE FOR SYNTHESIS is not on the REACH Annex XIV List
15.1.2. National regulations

Germany
AwSV/VwVwS Annex reference : Water hazard class (WGK) 3, strongly hazardous to water (KBwS-Beschluss; WGK No 594)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Denmark
Class for fire hazard : Class III-1
Store unit : 50 liter
Classification remarks : Flammable according to the Danish Ministry of Justice; Emergency management guidelines for the storage of flammable liquids must be followed
Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product. Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment
No additional information available

SECTION 16: Other information
Full text of R-, H- and EUH-phrases:

<table>
<thead>
<tr>
<th>R-phrase</th>
<th>H-phrase</th>
<th>EUH-phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 1</td>
<td>Acute Tox. 1</td>
<td>Acute Tox. 1</td>
</tr>
<tr>
<td>(Inhalation:vapour)</td>
<td>Acute Tox. 1</td>
<td>Acute Tox. 1</td>
</tr>
<tr>
<td>Acute Tox. 3</td>
<td>Acute Tox. 3</td>
<td>Acute Tox. 3</td>
</tr>
<tr>
<td>(Dermal)</td>
<td>Acute Tox. 3</td>
<td>Acute Tox. 3</td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td>Acute Tox. 4</td>
<td>Acute Tox. 4</td>
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<tr>
<td>(Oral)</td>
<td>Acute Tox. 4</td>
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</tr>
<tr>
<td>Aquatic Chronic 2</td>
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<tr>
<td>Hazardous to the aquatic environment — Chronic Hazard, Category 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin Irrit. 2</td>
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</tr>
<tr>
<td>Skin corrosion/irritation, Category 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H302</td>
<td>H302</td>
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</tr>
<tr>
<td>Harmful if swallowed</td>
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<td></td>
</tr>
<tr>
<td>H311</td>
<td>H311</td>
<td>H311</td>
</tr>
<tr>
<td>Toxic in contact with skin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H315</td>
<td>H315</td>
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</tr>
<tr>
<td>Causes skin irritation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H330</td>
<td>H330</td>
<td>H330</td>
</tr>
<tr>
<td>Fatal if inhaled</td>
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<td></td>
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<tr>
<td>H411</td>
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<tr>
<td>Toxic to aquatic life with long lasting effects</td>
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<tr>
<td>R22</td>
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<td>Harmful if swallowed</td>
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<td>R23/24</td>
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<td>Toxic by inhalation and in contact with skin</td>
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<td>Irritating to skin</td>
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</tr>
<tr>
<td>Harmful</td>
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</tbody>
</table>
TRIBUTYLAMINE FOR SYNTHESIS
Safety Data Sheet

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.