



Material Safety Data Sheet

TRIBUTYLAMINE

Section 1 - Chemical Product and Company Identification

MSDS Name: Tributylamine

Section 2 - Composition, Information on Ingredients

| CAS# | Chemical Name | EC no | EINECS/ELINCS |
|----------|---------------|----------|---------------|
| 102-82-9 | Tributylamine | 102-82-9 | NA |

Section 3 - Hazards Identification

3.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302
 Acute toxicity, Inhalation (Category 1), H330
 Acute toxicity, Dermal (Category 2), H310
 Skin irritation (Category 2), H315

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed.
 H310 + H330 Fatal in contact with skin or if inhaled.
 H315 Causes skin irritation.

Precautionary statement(s)

P262 Do not get in eyes, on skin, or on clothing.
 P280 Wear protective gloves/ protective clothing.

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|------------------------------|---|
| P301 + P312 + P330 | IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. |
| P302 + P352 + P310 | IF ON SKIN: Wash with plenty of water. Immediately call a POISON CENTER/doctor. |
| P304 + P340 + P310 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. |
| Supplement Hazard Statements | none |

3.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 4 - First Aid Measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

Section 5 - Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

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Hydrogen iodide, Potassium oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

Section 8 - Exposure Controls, Personal Protection

8.1 Control parameters

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Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full- face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9 - Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

- a) Appearance Form: liquid

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| b) Odour | Colour: colourless unpleasant |
| c) Odour Threshold | No data available |
| d) pH | 10,2 at 0,1 g/l at 25°C |
| e) Melting point/freezing point | Melting point/range: - 70 °C - lit. |
| f) Initial boiling point and boiling range | 216 °C - lit. |
| g) Flash point | 63 °C – closed cup |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available. |
| j) Upper/lower flammability or explosive limits | Upper flammability limit: 6 % (V) Lower explosion limit: 1,4 % (V) |
| k) Vapour pressure | 3,2 hPa at 55°C |
| l) Vapour density | 6,4 – (Air =1.0) |
| m) Relative density | 0,778 g/ml at 25°C |
| n) Water solubility | 80 g/l at 20 °C – OECD Test Guideline 105-slightly soluble |
| o) Partition coefficient: n-octanol/water | log Pow: 3,338 at 25°C |
| p) Auto-ignition temperature | 210°C at 1.015 hPa |
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | No data available |

9.2 Other safety information

| | |
|----------------------------|-------------------|
| Surface tension | 55 mN/m at 20°C |
| Relative vapour density | 6,4 – (Air = 1.0) |

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Section 10 - Stability and Reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx)

Other decomposition products - No data available

In the event of fire: see section 5

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male - 420 mg/kg

LC50 Inhalation - Rat - male and female - 4 h - 0,5 mg/l

(OECD Test Guideline 403)

LD50 Dermal - Rabbit - male - 195 mg/kg

Skin corrosion/irritation

Skin - Rabbit

Result: Irritating to skin.

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

(OECD Test Guideline 405)

Respiratory or skin sensitisation

Buehler Test - Guinea pig

Result: Does not cause skin sensitisation.

Germ cell mutagenicity

Ames test

Salmonella typhimurium

Result: negative

OECD Test Guideline 474

Mouse - male and female

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Result: negative

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: YA0350000

CNS stimulation., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Section 12 - Ecological Information

12.1 Toxicity

| | |
|---|--|
| Toxicity to fish | static test LC50 - <i>Oryzias latipes</i> - 16,3 mg/l - 96 h (OECD Test Guideline 203) |
| Toxicity to daphnia and other aquatic invertebrates | Immobilization EC50 - <i>Daphnia magna</i> (Water flea) - 8 mg/l - 48 h (OECD Test Guideline 202) |
| Toxicity to algae | static test EC50 - <i>Desmodesmus subspicatus</i> (green algae) - 3,6 mg/l - 72 h |

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 29 d
Result: 80,3 % - Readily biodegradable. (OECD Test Guideline 301B)

12.3 Bioaccumulative potential

Accumulation in aquatic organisms is unlikely.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

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Toxic to aquatic life.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Contaminated packaging

Dispose of as unused product.

Section 14 - Transport Information

14.1 UN number

ADR/RID: 2542 IMDG: 2542 IATA: 2542

14.2 UN proper shipping name

ADR/RID: TRIBUTYLAMINE
IMDG: TRIBUTYLAMINE
IATA: Tributylamine

14.3 Transport hazard class(es)

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

14.4 Packaging group

ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available

Section 15 - Regulatory Information

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

REACH - Restrictions on the manufacture, :
placing on the market and use of certain
dangerous substances, preparations and articles

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(Annex XVII)

15.2. Chemical safety assessment

For this product a chemical safety assessment was not carried out.

Section 16 - Other Information

Full text of H-Statements referred to under sections 2 and 3.

| | |
|-------------|---|
| H302 | Harmful if swallowed. |
| H310 | Fatal in contact with skin. |
| H310 + H330 | Fatal in contact with skin or if inhaled. |
| H315 | Causes skin irritation. |
| H330 | Fatal if inhaled. |

Further information

The above information is believed to be correct but does not support to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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