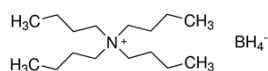


MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier

Product form : Substance
:
EC no : 251-658-2
CAS No : 33725-74-5
Product code : 6215P
Formula : C₁₆H₄₀BN
Chemical structure :



Synonyms : Tetra-N-Butylammonium Tetrahydridoborate.

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]

Substances and Mixtures H261
which, in contact with
water, emit flammable
gases, Category 2
Skin corrosion/irritation, H314
Category 1

Full text of classification categories and H statements : see section 16

Tetrabutylammonium borohydride

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Classification according to Directive 67/548/EEC or 1999/45/EC

C; R34

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)



GHS02

GHS05

Signal word (CLP)

: Danger

Hazard statements (CLP)

: H261 - In contact with water releases flammable gases
H314 - Causes severe skin burns and eye damage

Precautionary statements (CLP)

: P261 - Avoid breathing fume, gas, vapours
P280 - Wear eye protection, face protection, protective clothing, protective gloves
P231+P232 - Handle and store contents under inert gas Protect from moisture
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a doctor, a POISON CENTER
P422 - Store contents under ...

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name	Product identifier	%
Tetrabutylammonium borohydride	(CAS No) 33725-74-5 (EC no) 251-658-2	100

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

3.2. Mixture

Not applicable

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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 : Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation or rash 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. Do not induce vomiting. If you feel unwell, seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Causes severe skin burns and eye damage.

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 : Water. Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : In contact with water releases flammable gases.

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. Do not breathe gas.

6.1.2. For emergency responders

No additional information available

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. Absorb spillage to prevent material damage.

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 : Avoid contact with skin and eyes.
- Hygiene measures : 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 in a dry place. Protect from moisture. Store in a well-ventilated place.
- Incompatible products : Oxidizing agent. Strong acids.

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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 appropriate mask

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystals.
Colour	: White.
Odour	: No data available
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 124 - 128 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available

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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 under normal conditions of use.

10.3. Possibility of hazardous reactions

Reacts violently with water. In contact with water releases flammable gases.

10.4. Conditions to avoid

Overheating. Heat. Moisture. Water, humidity.

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

Acute toxicity : Not classified

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Serious eye damage, category 1, implicit

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

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SECTION 12: Ecological information

12.1. Toxicity

No additional information available

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

No additional information available

SECTION 14: Transport information

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

14.1. UN number

UN-No. (ADR)	: 3131
UN-No. (IMDG)	: 3131
UN-No.(IATA)	: 3131
UN-No.(ADN)	: Not regulated
UN-No. (RID)	: Not regulated

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: WATER-REACTIVE SOLID, CORROSIVE, N.O.S.
Proper Shipping Name (IMDG)	: WATER-REACTIVE SOLID, CORROSIVE, N.O.S.
Proper Shipping Name (IATA)	: WATER-REACTIVE SOLID, CORROSIVE, N.O.S.
Proper Shipping Name (ADN)	: Not regulated
Proper Shipping Name (RID)	: Not regulated
Transport document description (ADR)	: UN 3131 WATER-REACTIVE SOLID, CORROSIVE, N.O.S., 4.3 (8), II, (D/E)
Transport document description (IMDG)	: UN 3131 WATER-REACTIVE SOLID, CORROSIVE, N.O.S., 4.3 (8), II
Transport document description (IATA)	: UN 3131 WATER-REACTIVE SOLID, CORROSIVE, N.O.S., 4.3, II

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 4.3 (8)
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Danger labels (ADR) : 4.3, 8



IMDG

Transport hazard class(es) (IMDG) : 4.3 (8)

Danger labels (IMDG) : 4.3, 8



IATA

Transport hazard class(es) (IATA) : 4.3 (8)

Hazard labels (IATA) : 4.3, 8



ADN

Transport hazard class(es) (ADN) : Not regulated

RID

Transport hazard class(es) (RID) : Not regulated

14.4. Packing group

Packing group (ADR) : II

Packing group (IMDG) : II

Packing group (IATA) : II

Packing group (ADN) : Not regulated

Packing group (RID) : Not regulated

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : WC2

Special provision (ADR) : 274

Limited quantities (ADR) : 500g

Excepted quantities (ADR) : E2

Packing instructions (ADR) : P410, IBC06

Mixed packing provisions (ADR) : MP14

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Portable tank and bulk container instructions (ADR)	: T3
Portable tank and bulk container special provisions (ADR)	: TP33
Tank code (ADR)	: SGAN
Vehicle for tank carriage	: AT
Transport category (ADR)	: 0
Special provisions for carriage - Packages (ADR)	: V1
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV23
Hazard identification number (Kemler No.)	: 482
Orange plates	:



Tunnel restriction code (ADR)	: D/E
EAC code	: 4W

- Transport by sea

Special provision (IMDG)	: 76, 274
Limited quantities (IMDG)	: 0
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P410
Packing provisions (IMDG)	: PP40
IBC packing instructions (IMDG)	: IBC06
IBC special provisions (IMDG)	: B2
Tank instructions (IMDG)	: T3
Tank special provisions (IMDG)	: TP33
EmS-No. (Fire)	: F-G
EmS-No. (Spillage)	: S-L
Stowage category (IMDG)	: E
Stowage and handling (IMDG)	: SW5, H1
Segregation (IMDG)	: SG26

- Air transport

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y475
PCA limited quantity max net quantity (IATA)	: 5kg
PCA packing instructions (IATA)	: 483
PCA max net quantity (IATA)	: 15kg
CAO packing instructions (IATA)	: 490
CAO max net quantity (IATA)	: 50kg
Special provision (IATA)	: A3
ERG code (IATA)	: 4CW

- Inland waterway transport

Not regulated

- Rail transport

Not regulated

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

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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

Tetrabutylammonium borohydride is not on the REACH Candidate List

Tetrabutylammonium borohydride is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Denmark

Recommendations Danish Regulation : 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

Full text of R-, H- and EUH-phrases:

Skin Corr. 1	Skin corrosion/irritation, Category 1
Water-react. 2	Substances and Mixtures which, in contact with water, emit flammable gases, Category 2
H261	In contact with water releases flammable gases
H314	Causes severe skin burns and eye damage
R34	Causes burns
C	Corrosive

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