MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier

<table>
<thead>
<tr>
<th>Product form</th>
<th>Sub stance</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC-No.</td>
<td>200-311-3</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>57-09-0</td>
</tr>
<tr>
<td>Product code</td>
<td>02681</td>
</tr>
<tr>
<td>Chemical structure</td>
<td>( \text{CH}_3 \text{Br}^- \text{H}_2\text{C(H}<em>2\text{C)}</em>{15}\text{N}^+\text{CH}_3 \text{CH}_3 )</td>
</tr>
</tbody>
</table>

Synonyms: Hexadecyltrimethylammonium bromide / Cetrimonium bromide / Palmityltrimethylammonium bromide / CTAB / Cetyltrimethylammonium bromide

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

1.2.1. Relevant identified uses

Industrial/Professional use spec: Industrial
For professional use only

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>Haz number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation, Category 1</td>
<td>H318</td>
</tr>
<tr>
<td>Acute toxicity (oral), Category 4</td>
<td>H302</td>
</tr>
<tr>
<td>Skin corrosion/irritation, Category 2</td>
<td>H315</td>
</tr>
<tr>
<td>Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation</td>
<td>H335</td>
</tr>
<tr>
<td>Hazardous to the aquatic</td>
<td>H400</td>
</tr>
</tbody>
</table>
N-CEYL-N,N,N TRIMETHYL AMMONIUM BROMIDE AR
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environment — Acute
Hazard, Category 1
Full text of H statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]
Xn; R22
Xi; R41
Xi; R37/38
N; R50
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) : GHS05 GHS09

Signal word (CLP) : Danger
Hazard statements (CLP) : H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
H400 - Very toxic to aquatic life.

Precautionary statements (CLP) : P261 - Avoid breathing vapours, spray, dust, fume, gas.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances
Name : N-CEYL-N,N,N TRIMETHYL AMMONIUM BROMIDE AR
CAS-No. : 57-09-0
EC-No. : 200-311-3
3.2. Mixtures
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. Call a POISON CENTER/doctor if you feel unwell.
First-aid measures after skin contact: Wash with plenty of water/…. Wash contaminated clothing before reuse. Get medical advice/attention.
First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
First-aid measures after ingestion: Rinse mouth. Call a POISON CENTER/doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects after inhalation: May cause respiratory irritation.
Symptoms/effects after skin contact: Causes skin irritation.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: Swallowing a small quantity of this material will result in serious health hazard.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media
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 enter fire area without proper protective equipment, including respiratory protection.

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: Ventilate area.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: 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:** Avoid contact with skin and eyes. Use only outdoors or in a well-ventilated area. Do not breathe vapours.

**Hygiene measures:** Do not eat, drink or smoke when using this product. 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 well-ventilated place.

#### 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:** [In case of inadequate ventilation] wear respiratory protection.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

**Physical state:** Solid

**Colour:** White powder.

**Odour:** Odourless.

**Odour threshold:** No data available

**pH:** 5 - 7

**Relative evaporation rate (butylacetate=1):** No data available

**Melting point:** 248 - 251 °C

**Freezing point:** No data available

**Boiling point:** No data available

**Flash point:** 244 °C

**Auto-ignition temperature:** No data available

**Decomposition temperature:** No data available

**Flammability (solid, gas):** No data available
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Water: 36.4 g/l at 20 °C - completely soluble</td>
</tr>
<tr>
<td>Log Pow</td>
<td>3.18</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

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.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
Direct sunlight. Air contact. Moisture.

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                                : Oral: Harmful if swallowed.

Skin corrosion/irritation                     : Causes skin irritation.
  pH: 5 - 7                                    |

Serious eye damage/irritation                 : Causes serious eye damage.
  pH: 5 - 7                                    |

Respiratory or skin sensitisation             : Not classified

Germ cell mutagenicity                        : Not classified

Carcinogenicity                               : Not classified

Reproductive toxicity                         : Not classified
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STOT-single exposure : May cause respiratory irritation.

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - water : Very toxic to aquatic life.

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

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 hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

SECTION 14: Transport information

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

14.1. UN number
UN-No. (ADR) : 3077
UN-No. (IMDG) : 3077
UN-No. (IATA) : 3077
UN-No. (ADN) : 3077
UN-No. (RID) : 3077
### 14.2. UN proper shipping name

| Proper Shipping Name (ADR)                      | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| Proper Shipping Name (IMDG)                     | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| Proper Shipping Name (IATA)                     | Environmentally hazardous substance, solid, n.o.s. |
| Proper Shipping Name (ADN)                      | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| Proper Shipping Name (RID)                      | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| Transport document description (ADR)            | UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III, (E) |
| Transport document description (IMDG)           | UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III, MARINE POLLUTANT |
| Transport document description (IATA)           | UN 3077 Environmentally hazardous substance, solid, n.o.s., 9, III |
| Transport document description (ADN)            | UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III |
| Transport document description (RID)            | UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III |

### 14.3. Transport hazard class(es)

#### ADR

| Transport hazard class(es) (ADR) | 9 |
| Danger labels (ADR)              | 9 |
| ![Danger labels](image)          |  |

#### IMDG

| Transport hazard class(es) (IMDG) | 9 |
| Danger labels (IMDG)              | 9 |
| ![Danger labels](image)          |  |

#### IATA

| Transport hazard class(es) (IATA) | 9 |
| Hazard labels (IATA)              | 9 |
| ![Hazard labels](image)           |  |

#### ADN

| Transport hazard class(es) (ADN) | 9 |
| Danger labels (ADN)              | 9 |
| ![Danger labels](image)          |  |

#### RID

| Transport hazard class(es) (RID)  | 9 |
| ![Danger labels](image)           |  |
14.4. Packing group

Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : III
Packing group (RID) : III

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) : M7
  Special provisions (ADR) : 274, 335, 601, 375
  Limited quantities (ADR) : 5kg
  Excepted quantities (ADR) : E1
  Packing instructions (ADR) : P002, IBC08, LP02, R001
  Special packing provisions (ADR) : PP12, B3
  Mixed packing provisions (ADR) : MP10
  Portable tank and bulk container instructions (ADR) : T1, BK1, BK2
  Portable tank and bulk container special provisions (ADR) : TP33
  Tank code (ADR) : SGAV, LGBV
  Vehicle for tank carriage : AT
  Transport category (ADR) : 3
  Special provisions for carriage - Packages (ADR) : V13
  Special provisions for carriage - Bulk (ADR) : VC1, VC2
  Special provisions for carriage - Loading, unloading and handling (ADR) : CV13
  Hazard identification number (Kemler No.) : 90
  Orange plates : 90

  Tunnel restriction code (ADR) : E
  EAC code : 2Z

- Transport by sea
  Special provisions (IMDG) : 274, 335, 966, 967, 969
  Limited quantities (IMDG) : 5 kg
  Excepted quantities (IMDG) : E1
  Packing instructions (IMDG) : P002, LP02
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<table>
<thead>
<tr>
<th>Special packing provisions (IMDG)</th>
<th>PP12</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBC packing instructions (IMDG)</td>
<td>IBC08</td>
</tr>
<tr>
<td>IBC special provisions (IMDG)</td>
<td>B3</td>
</tr>
<tr>
<td>Tank instructions (IMDG)</td>
<td>T1, BK1, BK2, BK3</td>
</tr>
<tr>
<td>Tank special provisions (IMDG)</td>
<td>TP33</td>
</tr>
<tr>
<td>EmS-No. (Fire)</td>
<td>F-A</td>
</tr>
<tr>
<td>EmS-No. (Spillage)</td>
<td>S-F</td>
</tr>
<tr>
<td>Stowage category (IMDG)</td>
<td>A</td>
</tr>
<tr>
<td>Stowage and handling (IMDG)</td>
<td>SW23</td>
</tr>
<tr>
<td>MFAG-No</td>
<td>171</td>
</tr>
</tbody>
</table>

### Air transport

- PCA Exected quantities (IATA) : E1
- PCA Limited quantities (IATA)  : Y956
- PCA limited quantity max net quantity (IATA) : 30kg
- PCA packing instructions (IATA)  : 956
- CAO max net quantity (IATA) : 400kg
- Special provisions (IATA)  : A97, A158, A179, A197
- ERG code (IATA)  : 9L

### Inland waterway transport

- Classification code (ADN)  : M7
- Limited quantities (ADN) : 5 kg
- Excepted quantities (ADN)  : E1
- Carriage permitted (ADN)  : T* B**
- Equipment required (ADN) : PP, A
- Number of blue cones/lights (ADN)  : 0

### Rail transport

- Classification code (RID)  : M7
- Limited quantities (RID) : 5kg
- Excepted quantities (RID)  : E1
- Packing instructions (RID) : P002, IBC08, LP02, R001
- Special packing provisions (RID)  : PP12, B3
- Mixed packing provisions (RID) : MP10
- Portable tank and bulk container instructions (RID) : TP33
- Portable tank and bulk container special provisions (RID)  : T1, BK1, BK2
- Tank codes for RID tanks (RID) : SGAV, LGBV
- Transport category (RID)  : 3
- Special provisions for carriage – Packages (RID) : W13
- Special provisions for carriage – Bulk (RID)  : VC1, VC2
- Special provisions for carriage - Loading, unloading and handling (RID) : CW13, CW31
- Colis express (express parcels) (RID) : CE11
- Hazard identification number (RID)  : 90
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
N-CETYL-N,N,N TRIMETHYL AMMONIUM BROMIDE AR is not on the REACH Candidate List
N-CETYL-N,N,N TRIMETHYL AMMONIUM BROMIDE AR is not on the REACH Annex XIV List

15.1.2. National regulations

Germany
Reference to AwSV: Water hazard class (WGK) 3, severe hazard to water (Classification according to AwSV; ID No. 600)

Netherlands
SZW-lijst van kankerverwekkende stoffen: The substance is not listed
SZW-lijst van mutagene stoffen: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling: The substance is not listed

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-statements:

<table>
<thead>
<tr>
<th>R-</th>
<th>H-</th>
<th>EUH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 (Oral)</td>
<td>Acute toxicity (oral), Category 4</td>
<td></td>
</tr>
<tr>
<td>Aquatic Acute 1</td>
<td>Hazardous to the aquatic environment — Acute Hazard, Category 1</td>
<td></td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation, Category 1</td>
<td></td>
</tr>
<tr>
<td>Property</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation, Category 2</td>
<td></td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation</td>
<td></td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
<td></td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
<td></td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage.</td>
<td></td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
<td></td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
<td></td>
</tr>
<tr>
<td>R22</td>
<td>Harmful if swallowed.</td>
<td></td>
</tr>
<tr>
<td>R37/38</td>
<td>Irritating to respiratory system and skin</td>
<td></td>
</tr>
<tr>
<td>R41</td>
<td>Risk of serious damage to eyes</td>
<td></td>
</tr>
<tr>
<td>R50</td>
<td>Very toxic to aquatic organisms</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Dangerous for the environment</td>
<td></td>
</tr>
<tr>
<td>Xi</td>
<td>Irritant</td>
<td></td>
</tr>
<tr>
<td>Xn</td>
<td>Harmful</td>
<td></td>
</tr>
</tbody>
</table>

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.