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 index no: 601-018-00-7

EC no: 203-624-3

CAS No: 108-87-2

Product code: 4639D

Formula: C7H14 - (CH(CH3)CH2CH2CH2CH2CH2)

Chemical structure:

![Chemical structure](image)

Synonyms: Hexahydrotoluene

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]

- Flammable liquids, Category 2: H225
- Aspiration hazard, Category 1: H304
- Skin corrosion/irritation, Category 2: H315
- Specific target organ toxicity — Single: H336
METHYL CYCLOHEXANE FOR SYNTHESIS
Safety Data Sheet

exposure, Category 3,
Narcosis
Hazardous to the aquatic  H411
environment — Chronic
Hazard, Category 2

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

Classification according to Directive 67/548/EEC or 1999/45/EC
F; R11
Xn; R65
Xi; R38
N; R51/53
R67
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
- GHS08
- GHS07
- GHS09

Signal word (CLP):
- -

Hazard statements (CLP):
- H225 - Highly flammable liquid and vapour
- H304 - May be fatal if swallowed and enters airways
- H315 - Causes skin irritation
- H336 - May cause drowsiness or dizziness
- H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (CLP):
- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
- P273 - Avoid release to the environment
- P301+P310 - IF SWALLOWED: immediately call a POISON CENTER or doctor/physician
- P331 - Do NOT induce vomiting

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name:
METHYL CYCLOHEXANE FOR SYNTHESIS

CAS No:
108-87-2
SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see ... on this label).

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: Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/injuries after inhalation: May cause drowsiness or dizziness.

Symptoms/injuries after skin contact: Causes skin irritation.

Symptoms/injuries after ingestion: May be fatal if swallowed and enters airways.

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

Fire hazard: Highly flammable liquid and vapour.

Explosion hazard: May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters

No additional information available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Avoid breathing dust/fume/gas/mist/vapours/spray.

6.2. Environmental precautions

Toxic to aquatic life with long lasting effects.
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

Additional hazards when processed: Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling: No naked lights. No smoking. Use only non-sparking tools. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area.

Hygiene measures: Wash ... thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/... equipment.

Storage conditions: Keep in fireproof place. Keep container tightly closed.

Incompatible materials: Heat sources.

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: 98.19 g/mol

Colour: Clear Colorless.

Odour: faint benzene-like odor.

Odour threshold: No data available

pH: No data available

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

Melting point: -126 °C
Freezing point: No data available
Boiling point: 101 °C
Flash point: -4 °C
Auto-ignition temperature: 283 °C
Decomposition temperature: No data available
Flammability (solid, gas): Flammable
Highly flammable liquid and vapour
Vapour pressure: 49.3 hPa at 20,0 °C
Relative vapour density at 20 °C: 3.4
Relative density: No data available
Density: 0.77 g/cm³
Solubility: Water: Insoluble in water
Log Pow: 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: 0.011 - 0.067 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
Highly flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

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
May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified
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): May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard: May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - water: Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>METHYL CYCLOHEXANE FOR SYNTHESIS (108-87-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
</tbody>
</table>

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
Product/Packaging disposal recommendations: Dispose of contents/container to ...
Additional information: Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials: Hazardous waste due to toxicity.
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SECTION 14: Transport information
In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR) : 2296
UN-No. (IMDG) : 2296
UN-No. (IATA) : 2296
UN-No. (ADN) : 2296
UN-No. (RID) : 2296

14.2. UN proper shipping name
Proper Shipping Name (ADR) : METHYLCYCLOHEXANE
Proper Shipping Name (IMDG) : METHYLCYCLOHEXANE
Proper Shipping Name (IATA) : METHYLCYCLOHEXANE
Proper Shipping Name (ADN) : METHYLCYCLOHEXANE
Proper Shipping Name (RID) : METHYLCYCLOHEXANE
Transport document description (ADR) : UN 2296 METHYLCYCLOHEXANE, 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS
Transport document description (IMDG) : UN 2296 METHYLCYCLOHEXANE, 3, II, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS (-4°C c.c.)
Transport document description (IATA) : UN 2296 METHYLCYCLOHEXANE, 3, II, ENVIRONMENTALLY HAZARDOUS
Transport document description (ADN) : UN 2296 METHYLCYCLOHEXANE, 3, II, ENVIRONMENTALLY HAZARDOUS
Transport document description (RID) : UN 2296 METHYLCYCLOHEXANE, 3, II, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR) : 3
Danger labels (ADR) : 3

IMDG
Transport hazard class(es) (IMDG) : 3
Danger labels (IMDG) : 3

IATA
Transport hazard class(es) (IATA) : 3
Hazard labels (IATA) : 3

ADN
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**Transport hazard class(es) (ADN)** :
3

**Danger labels (ADN)** :
3

**RID**

**Transport hazard class(es) (RID)** :
3

**Danger labels (RID)** :
3

#### 14.4. Packing group

<table>
<thead>
<tr>
<th>Packing group (ADR)</th>
<th>II</th>
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</thead>
<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

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

#### 14.6. Special precautions for user

**- Overland transport**

<table>
<thead>
<tr>
<th>Classification code (ADR)</th>
<th>F1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited quantities (ADR)</td>
<td>1L</td>
</tr>
<tr>
<td>Excepted quantities (ADR)</td>
<td>E2</td>
</tr>
<tr>
<td>Packing instructions (ADR)</td>
<td>P001, IBC02, R001</td>
</tr>
<tr>
<td>Mixed packing provisions (ADR)</td>
<td>MP19</td>
</tr>
<tr>
<td>Portable tank and bulk container instructions (ADR)</td>
<td>T4</td>
</tr>
<tr>
<td>Portable tank and bulk container special provisions (ADR)</td>
<td>TP1</td>
</tr>
<tr>
<td>Tank code (ADR)</td>
<td>LGBF</td>
</tr>
<tr>
<td>Vehicle for tank carriage</td>
<td>FL</td>
</tr>
<tr>
<td>Transport category (ADR)</td>
<td>2</td>
</tr>
<tr>
<td>Special provisions for carriage - Operation (ADR)</td>
<td>S2, S20</td>
</tr>
<tr>
<td>Hazard identification number (Kemler No.)</td>
<td>33</td>
</tr>
<tr>
<td>Orange plates</td>
<td>3296</td>
</tr>
</tbody>
</table>

| Tunnel restriction code (ADR) | D/E |
| EAC code                      | 3YE |
- Transport by sea

Limited quantities (IMDG) : 1 L
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P001
IBC packing instructions (IMDG) : IBC02
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP1
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D
Stowage category (IMDG) : B
Flash point (IMDG) : -4°C c.c.
MFAG-No : 128

- Air transport

PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y341
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 353
PCA max net quantity(IATA) : 5L
CAO packing instructions (IATA) : 364
CAO max net quantity (IATA) : 60L
ERG code (IATA) : 3H

- Inland waterway transport

Classification code (ADN) : F1
Limited quantities (ADN) : 1 L
Excepted quantities (ADN) : E2
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 1

- Rail transport

Classification code (RID) : F1
Limited quantities (RID) : 1L
Excepted quantities (RID) : E2
Packing instructions (RID) : P001, IBC02, R001
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T4
Portable tank and bulk container special provisions (RID) : TP1
Tank codes for RID tanks (RID) : LGBF
Transport category (RID) : 2
Colis express (express parcels) (RID) : CE7
Hazard identification number (RID) : 33

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
15.1.2. National regulations

Germany
AwSV/VwVwS Annex reference: Water hazard class (WGK) 2, hazardous to water (Classification according to VwVwS, Annex 3; WGK No 2548)

Denmark
Classification remarks: 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

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>Aquatic Chronic 2</th>
<th>Hazardous to the aquatic environment — Chronic Hazard, Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asp. Tox. 1</td>
<td>Aspiration hazard, Category 1</td>
</tr>
<tr>
<td>Flam. Liq. 2</td>
<td>Flammable liquids, Category 2</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation, Category 2</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity — Single exposure, Category 3, Narcosis</td>
</tr>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapour</td>
</tr>
<tr>
<td>H304</td>
<td>May be fatal if swallowed and enters airways</td>
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<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H336</td>
<td>May cause drowsiness or dizziness</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects</td>
</tr>
<tr>
<td>R11</td>
<td>Highly flammable</td>
</tr>
<tr>
<td>R38</td>
<td>Irritating to skin</td>
</tr>
<tr>
<td>R51/53</td>
<td>Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment</td>
</tr>
<tr>
<td>R65</td>
<td>Harmful: may cause lung damage if swallowed</td>
</tr>
<tr>
<td>R67</td>
<td>Vapours may cause drowsiness and dizziness</td>
</tr>
<tr>
<td>F</td>
<td>Highly flammable</td>
</tr>
<tr>
<td>N</td>
<td>Dangerous for the environment</td>
</tr>
<tr>
<td>Xi</td>
<td>Irritant</td>
</tr>
<tr>
<td>Xn</td>
<td>Harmful</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.