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

1.1. Product identifier
Product form: Substance
Physical state: Liquid
Substance name: 7-BROMO-1-HEPTENE
Product code: ENEB0550
Formula: C7H13Br
Synonyms: 6-HEPTENYL BROMIDE
Chemical family: BROMINATED ORGANIC

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: Chemical intermediate

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet
GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelestde.com

1.4. Emergency telephone number
Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Flammable liquids, Category 3 H226
Serious eye damage/eye irritation, Category 2 H319
Full text of H statements: 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):

<table>
<thead>
<tr>
<th>GHS02</th>
<th>GHS07</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>!</td>
</tr>
</tbody>
</table>

Signal word (CLP): Warning
Hazard statements (CLP):
H226 - Flammable liquid and vapour.
H319 - Causes serious eye irritation.
Precautionary statements (CLP):
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No
2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Name</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-constituent</td>
<td>7-BROMO-1-HEPTENE</td>
<td>4117-09-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-Bromo-1-heptene</td>
<td>(CAS-No.) 4117-09-3</td>
<td>95 - 100</td>
<td>Flam. Liq. 3, H226 Eye Irrit. 2, H319</td>
</tr>
<tr>
<td>1,9-Decadiene</td>
<td>(CAS-No.) 1647-16-1 (EC-No.) 216-711-6</td>
<td>0 - 5</td>
<td>Flam. Liq. 3, H226 Aquatic Acute 1, H400</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of water…. Get medical advice/attention.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

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

Symptoms/effects after inhalation: No information available.

Symptoms/effects after skin contact: May cause skin irritation.

Symptoms/effects after eye contact: Causes serious eye irritation.

Symptoms/effects after ingestion: No information available.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media


Unsuitable extinguishing media: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Flammable liquid and vapour. Irritating fumes and acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters

Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Eliminate ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Protective equipment: Wear protective equipment as described in Section 8.

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed: Keep away from heat, open flames, sparks. No smoking.

Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapour and mist. Ground/bond container and receiving equipment. Provide good ventilation in process area to prevent formation of vapour. Take precautionary measures against static discharge. Use only non-sparking tools.

Hygiene measures: Wash contaminated clothing before reuse. 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

Technical measures: Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.

Storage conditions: Keep container tightly closed. Keep in a cool place. May freeze if stored <0°C.

Incompatible materials: Oxidizing agent.

Storage area: Store in a well-ventilated place. Store away from heat.

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

Appropriate engineering controls:

Provide local exhaust or general room ventilation.

Personal protective equipment:

Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:

Neoprene or nitrile rubber gloves

Eye protection:

Chemical goggles. Contact lenses should not be worn

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>177.08 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>No additional information available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Melting point</td>
<td>&lt; 0 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>27 °C @ 1 mm Hg</td>
</tr>
<tr>
<td>Flash point</td>
<td>58 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Flammable liquid and vapour.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>1 mm Hg @ 25°C</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.162</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>&lt; 3 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</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.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Heat. Sparks. Open flame.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

1,9-Decadiene (1647-16-1)

<table>
<thead>
<tr>
<th>Route of Exposure</th>
<th>LD50 (mg/kg)</th>
<th>ATE CLP (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral rat</td>
<td>14380</td>
<td>14380</td>
</tr>
<tr>
<td>ATE CLP (oral)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7-BROMO-1-HEPTENE
Safety Data Sheet

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Symptoms/effects after inhalation</td>
<td>No information available.</td>
</tr>
<tr>
<td>Symptoms/effects after skin contact</td>
<td>May cause skin irritation.</td>
</tr>
<tr>
<td>Symptoms/effects after eye contact</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Symptoms/effects after ingestion</td>
<td>No information available.</td>
</tr>
<tr>
<td>Reason for classification</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological information**

12.1. **Toxicity**

Ecology - general : Toxic to aquatic life.
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

1,9-Decadiene (1647-16-1)

| LC50 fish 1 | 0.27 - 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through]) |

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**

Other adverse effects : This substance may be hazardous to the environment.

**SECTION 13: Disposal considerations**

13.1. **Waste treatment methods**

Sewage disposal recommendations : Do not dispose of waste into sewer.
Product/Packaging disposal recommendations : Incinerate. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials : Avoid release to the environment.

**SECTION 14: Transport information**

14.1. **UN number**

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

14.1. **UN number**

UN-No. (ADR) : 1993
UN-No. (IMDG) : 1993
UN-No. (IATA) : 1993
UN-No. (ADN) : 1993
UN-No. (RID) : 1993

14.2. **UN proper shipping name**

Proper Shipping Name (ADR) : FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (IMDG) : FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (IATA) : Flammable liquid, n.o.s.
Proper Shipping Name (ADN) : FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (RID) : FLAMMABLE LIQUID, N.O.S.
# 7-BROMO-1-HEPTENE
Safety Data Sheet

<table>
<thead>
<tr>
<th>Transport document description (ADR)</th>
<th>UN 1993 FLAMMABLE LIQUID, N.O.S. (7-BROMO-1-HEPTENE), 3, III, (D/E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport document description (IMDG)</td>
<td>UN 1993 FLAMMABLE LIQUID, N.O.S. (7-BROMO-1-HEPTENE), 3, III</td>
</tr>
<tr>
<td>Transport document description (IATA)</td>
<td>UN 1993 Flammable liquid, n.o.s. (7-BROMO-1-HEPTENE), 3, III</td>
</tr>
<tr>
<td>Transport document description (ADN)</td>
<td>UN 1993 FLAMMABLE LIQUID, N.O.S. (7-BROMO-1-HEPTENE), 3, III</td>
</tr>
<tr>
<td>Transport document description (RID)</td>
<td>UN 1993 FLAMMABLE LIQUID, N.O.S. (7-BROMO-1-HEPTENE), 3, III</td>
</tr>
</tbody>
</table>

## 14.3. Transport hazard class(es)

### ADR
- Transport hazard class(es) (ADR): 3
- Danger labels (ADR): 3

![Danger Label 3](image)

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

![Danger Label 3](image)

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

![Danger Label 3](image)

### ADN
- Transport hazard class(es) (ADN): 3
- Danger labels (ADN): 3

![Danger Label 3](image)

### RID
- Transport hazard class(es) (RID): 3
- Danger labels (RID): 3

![Danger Label 3](image)

## 14.4. Packing group

<table>
<thead>
<tr>
<th>Packing group (ADR)</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group (IMDG)</td>
<td>III</td>
</tr>
<tr>
<td>Packing group (IATA)</td>
<td>III</td>
</tr>
<tr>
<td>Packing group (ADN)</td>
<td>III</td>
</tr>
</tbody>
</table>

Print date: 10/04/2019  EN (English)  SDS ID: ENEB0550  6/9
7-BROMO-1-HEPTENE
Safety Data Sheet

Packing group (RID) : III

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) : F1
  Special provisions (ADR) : 274, 601, 640E
  Limited quantities (ADR) : 5 l
  Excepted quantities (ADR) : E1
  Packing instructions (ADR) : P001, IBC03, LP01, R001
  Mixed packing provisions (ADR) : MP19
  Portable tank and bulk container instructions (ADR) : T4
  Portable tank and bulk container special provisions (ADR) : TP1, TP29
  Tank code (ADR) : LGBF
  Vehicle for tank carriage : FL
  Transport category (ADR) : 3
  Special provisions for carriage - Packages (ADR) : V12
  Special provisions for carriage - Operation (ADR) : S2
  Hazard identification number (Kemler No.) : 30
  Orange plates : 30
  Tunnel restriction code (ADR) : D/E

- Transport by sea
  Special provisions (IMDG) : 223, 274, 955
  Limited quantities (IMDG) : 5 L
  Excepted quantities (IMDG) : E1
  Packing instructions (IMDG) : P001, LP01
  IBC packing instructions (IMDG) : IBC03
  Tank instructions (IMDG) : T4
  Tank special provisions (IMDG) : TP1, TP29
  EmS-No. (Fire) : F-E
  EmS-No. (Spillage) : S-E
  Stowage category (IMDG) : A

- Air transport
  PCA Excepted quantities (IATA) : E1
  PCA Limited quantities (IATA) : Y344
  PCA limited quantity max net quantity (IATA) : 10L
  PCA packing instructions (IATA) : 355
  PCA max net quantity (IATA) : 60L
  CAO packing instructions (IATA) : 366
  CAO max net quantity (IATA) : 220L
  Special provisions (IATA) : A3
  ERG code (IATA) : 3L

- Inland waterway transport
  Classification code (ADN) : F1
  Special provisions (ADN) : 274, 601, 640E
  Limited quantities (ADN) : 5 L
7-BROMO-1-HEPTENE
Safety Data Sheet

| Excepted quantities (ADN) | : E1 |
| Carriage permitted (ADN) | : T |
| Equipment required (ADN) | : PP, EX, A |
| Ventilation (ADN) | : VE01 |
| Number of blue cones/lights (ADN) | : 0 |

- Rail transport
  
  | Classification code (RID) | : F1 |
  | Special provisions (RID) | : 274, 601, 640E |
  | Limited quantities (RID) | : 5L |
  | Excepted quantities (RID) | : E1 |
  | Packing instructions (RID) | : P001, IBC03, LP01, R001 |
  | Mixed packing provisions (RID) | : MP19 |
  | Portable tank and bulk container instructions (RID) | : T4 |
  | Portable tank and bulk container special provisions (RID) | : TP1, TP29 |
  | Tank codes for RID tanks (RID) | : LGBF |
  | Transport category (RID) | : 3 |
  | Special provisions for carriage – Packages (RID) | : W12 |
  | Colis express (express parcels) (RID) | : CE4 |
  | Hazard identification number (RID) | : 30 |

14.7. Transport in bulk according to Annex II of Marpol 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
7-BROMO-1-HEPTENE is not on the REACH Candidate List
7-BROMO-1-HEPTENE is not on the REACH Annex XIV List
7-BROMO-1-HEPTENE is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

| % Volatiles | : < 3 % |

15.1.2. National regulations

Germany

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

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

Print date: 10/04/2019 EN (English) SDS ID: ENEB0550 8/9
### Chemical safety assessment

No additional information available

### SECTION 16: Other information

**Abbreviations and acronyms:**
- Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

**Other information:** Prepared by safety and environmental affairs.

**Full text of H- and EUH-statements:**
- **Aquatic Acute 1**: Hazardous to the aquatic environment — Acute Hazard, Category 1
- **Eye Irrit. 2**: Serious eye damage/eye irritation, Category 2
- **Flam. Liq. 3**: Flammable liquids, Category 3
- **H226**: Flammable liquid and vapour.
- **H319**: Causes serious eye irritation.
- **H400**: Very toxic to aquatic life.

**SDS EU (REACH Annex II) - Custom**

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

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