# Material Safety Data Sheet

According to OSHA and ANSI

Printing date 06/04/2011 Reviewed on 01/05/2009

---

## 1 Identification of the substance/mixture and of the company/undertaking

**Product identifier**

**Product name:** (1R)-(-)-Menthyl acetate

**Stock number:** L14095

**EINECS Number:** 220-076-0

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

**Sector of Use:** SU24 Scientific research and development

---

## 2 Hazards identification

**Classification of the substance or mixture**

- H227 Combustible liquid.

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

Not applicable

**Information concerning particular hazards for human and environment:**

Not applicable

**Label elements**

- **Observe the general safety regulations when handling chemicals**

---

### Hazard description:

**WHMIS classification**

**Classification system**

<table>
<thead>
<tr>
<th>Hazard</th>
<th>HMIS ratings (scale 0-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH</td>
<td>1</td>
</tr>
<tr>
<td>FIRE</td>
<td>2</td>
</tr>
<tr>
<td>REACTIVITY</td>
<td>1</td>
</tr>
</tbody>
</table>

Other hazards

**Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

---

## 3 Composition/information on ingredients

**Chemical characterization:** Substances

**CAS# Description:**

(1R)-(-)-Menthyl acetate (CAS# 2623-23-6): 100%

**Identification number(s):**

- EINECS Number: 220-076-0

---

## 4 First aid measures

**Description of first aid measures**

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

(Contd. on page 2)
Material Safety Data Sheet
According to OSHA and ANSI

Product name: (1R)-(-)-Menthyl acetate

5 Firefighting measures

Extinguishing media
Suitable extinguishing agents
Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Environmental precautions:
Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
No special precautions are necessary if used correctly.
Information about protection against explosions and fires: Keep ignition sources away.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Store away from oxidizing agents.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

8 Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Control parameters
Components with limit values that require monitoring at the workplace: Not required.
Additional information: No data
Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Breathing equipment: Use suitable respirator when high concentrations are present.
Protection of hands:
Impervious gloves
Check protective gloves prior to each use for their proper condition.
Material Safety Data Sheet  
According to OSHA and ANSI

Product name: (1R)-(-)-Menthyl acetate

Material of gloves  
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses  
Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance: 
Form: Liquid
Color: Colorless
Odor: Not determined
Odour threshold: Not determined.

pH-value: Not determined.

Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: 229-231°C (444-448 °F)
Sublimation temperature / start: Not determined

Flash point: 77°C (171 °F)

Flammability (solid, gaseous) Not applicable.

Ignition temperature: Not determined
Decomposition temperature: Not determined
Auto igniting: Not determined.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:
Lower: Not determined
Upper: Not determined

Vapor pressure: Not determined

Density at 20°C (68 °F): 0.925 g/cm³ (7.719 lbs/gal)
Relative density Not determined.
Vapour density Not determined.
Evaporation rate Not determined.

Solubility in / Miscibility with
Water: Not miscible or difficult to mix

Segregation coefficient (n-octonol/water): Not determined.

Viscosity:
  dynamic: Not determined.
  kinematic: Not determined.

Other information No further relevant information available.

10 Stability and reactivity

Reactivity
Chemical stability
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions No dangerous reactions known

Incompatible materials: Oxidizing agents
Hazards decomposition products: Carbon monoxide and carbon dioxide

11 Toxicological information

Information on toxicological effects

Acute toxicity:
LD/LC50 values that are relevant for classification:

Oral LD50 >5000 mg/Kg (rat)
Dermal LD50 >5000 mg/Kg (rabbit)

Primary irritant effect: on the skin May cause irritation
Material Safety Data Sheet  
According to OSHA and ANSI

Printing date 06/04/2011  
Reviewed on 01/05/2009

**Product name:** (1R)-(-)-Menthyl acetate

---

**12 Ecological information**

**Toxicity**
- *Acquatic toxicity:* No further relevant information available.
- *Persistence and degradability:* No further relevant information available.
- *Behavior in environmental systems:* No further relevant information available.
- *Bioaccumulative potential:* No further relevant information available.
- *Mobility in soil:* No further relevant information available.
- *Additional ecological information:* No further relevant information available.

---

**13 Disposal considerations**

**Waste treatment methods**
- **Recommendation:** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

---

**14 Transport information**

Not a hazardous material for transportation.

<table>
<thead>
<tr>
<th><strong>DOT regulations:</strong></th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land transport ADR/RID (cross-border):</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>ADR/RID class:</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Maritime transport IMDG:</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>IMDG Class:</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Marine pollutant:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Air transport ICAO-TI and IATA-DGR:</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>ICAO/IATA Class:</strong></td>
<td>None</td>
</tr>
</tbody>
</table>

**Special precautions for user:** Not applicable.

**Transport/Additional information:** Not dangerous according to the above specifications. 
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

---

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Product related hazard informations:**
  Observe the general safety regulations when handling chemicals
- **National regulations:**
  All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
  All components of this product are listed on the Canadian Domestic Substances List (DSL).
- **Information about limitation of use:**
  For use only by technically qualified individuals.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact:
Zachariah C. Holt
Global EHS Manager

Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DCT: US Department of Transportation
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
WHMIS: Hazardous Materials Identification System (USA)
HMIS: Hazardous Materials Identification System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent