Material Safety Data Sheet

Section 1 - Chemical Product and Company Identification

MSDS Name: gamma-Terpinene, 95%
Catalog Numbers: AC207500000, AC207500050, AC207501000
Synonyms: 1-Methyl-4-(1-methylethyl)-1,4-cyclohexadiene

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticaal 3a
2440 Geel, Belgium
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#: 99-85-4
Chemical Name: 1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-%
EINECS#: 202-794-6

Hazard Symbols: XI

Risk Phrases: 10 36/37/38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Flammable liquid and vapor. Causes eye, skin, and respiratory tract irritation. Target Organs: Respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation.
Skin: Causes skin irritation.
Ingestion: May cause irritation of the digestive tract.
Inhalation: Causes respiratory tract irritation. Vapors may cause dizziness or suffocation.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medical aid.
Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Wash mouth out with water.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. Containers may explode when heated.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

Autoignition Temperature: Not available.

Flash Point: 51 deg C (123.80 deg F)

Explosion Limits: Lower: Not available

Explosion Limits: Upper: Not available

NFPA Rating: health: 1; flammability: 2; instability: 0;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Wash thoroughly after handling. Use with adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid breathing dust, mist, or vapor. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,4-Cyclohexadiene, 1-methyl</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>4-(1-methyl)ethyl</td>
<td></td>
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</tbody>
</table>

OSHA Vacated PELs: 1,4-Cyclohexadiene, 1-methyl-4-(1-methyl)ethyl: None listed

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Color: Not available
Odor: Citrusy odor
pH: Not available

Vapor Pressure: .7 mm Hg @ 20 deg C
Vapor Density: 4.70
Evaporation Rate: Not available
Viscosity: Not available

Boiling Point: 182 deg C @ 760.00mm Hg (359.60°F)
Freezing/Melting Point: Not available

Decomposition Temperature: Not available
Solubility in water: miscible with alcohol, ether
Specific Gravity/Density: .8490g/cm3
Molecular Formula: C10H16
Molecular Weight: 136.24

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, ignition sources, excess heat.
Incompatibilities with Other Materials: Not available
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will occur.

Section 11 - Toxicological Information

RTECS#: CAS# 99-85-4: OS8070000
RTECS: CAS# 99-85-4:
LD50/LC50: Draize test, rabbit, skin: 500 mg/24H Moderate;
Oral, rat: LD50 = 3650 mg/kg;
Carcinogenicity: 1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl) - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Other: No information available.

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: DIPENTENE
Hazard Class: 3
UN Number: UN2052
Packing Group: III
Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:
Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI

Risk Phrases:
- R 10 Flammable.
- R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:
- S 9 Keep container in a well-ventilated place.
- S 16 Keep away from sources of ignition - No smoking.
- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 33 Take precautionary measures against static discharges.
- S 37/39 Wear suitable gloves and eye/face protection.

WGK (Water Danger/Protection)

CAS# 99-85-4: Not available

Canada

CAS# 99-85-4 is listed on Canada's DSL List
Canadian WHMIS Classifications: B2, D2B
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
CAS# 99-85-4 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 99-85-4 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 2/03/1999
Revision #5 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.