1. Product and Company Identification

Material name: HEPTANE
Version #: 01
Revision date: 06-02-2011
CAS #: 142-82-5
Product Codes: J.T.Baker: 9177, 9338, 9365, 9431, M953, M955, M956  
Macron: 5139, 5164, 5177, V554
Synonym(s): DIPROPYL METHANE * HEPTYL HYDRIDE * NORMAL HEPTANE * N-HEPTANE
Manufacturer: Avantor Performance Materials, Inc.
Address: 222 Red School Lane  
Phillipsburg, NJ 08865
US
Customer Service: 800-582-2537
24 Hour Emergency: 908-859-2151
Chemtrec: 800-424-9300

2. Hazards Identification

Emergency overview: DANGER
Flammable liquid and vapor. Will be easily ignited by heat, spark or flames.
Harmful or fatal if swallowed. Causes skin and eye irritation. Causes respiratory tract irritation.
High vapor concentrations may cause drowsiness and irritation of the eyes or respiratory tract.
OSHA regulatory status: This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects:
Routes of exposure: Inhalation. Ingestion. Skin contact. Eye contact.
Eyes: Causes eye irritation. High vapor/aerosol concentrations may be irritating.
Skin: Causes skin irritation. Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping.
Inhalation: May cause irritation to the mucous membranes and upper respiratory tract. In high concentrations, vapors and aerosol mists have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Ingestion: Harmful or fatal if swallowed. Ingestion may result in vomiting; aspiration (breathing) of vomitus into lungs must be avoided as even small quantities may result in aspiration pneumonitis.
Chronic effects: Organic solvents may be absorbed into the body by inhalation and ingestion and cause permanent damage to the nervous system, including the brain. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Potential environmental effects: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. Composition / Information on Ingredients

Components | CAS #  | Percent
---|---|---
HEPTANE | 142-82-5 | 90 - 100

4. First Aid Measures

First aid procedures:
Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Get medical attention.

Ingestion: Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Notes to physician: Treat symptomatically. Symptoms may be delayed.

General advice: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties: HIGHLY FLAMMABLE! Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Heat may cause the containers to explode.

Extinguishing media:
- Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Protection of firefighters:
- Specific hazards arising from the chemical: Can be ignited easily and burns vigorously. Vapor from the solvent may accumulate in container headspace resulting in flammability hazard.
- Protective equipment and precautions for firefighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Move containers from fire area if you can do so without risk. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Some of these materials, if spilled, may evaporate leaving a flammable residue. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Specific methods: In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers.

Hazardous combustion products: Carbon monoxide and carbon dioxide.

6. Accidental Release Measures

Personal precautions: Wear appropriate protective equipment and clothing during clean-up. Keep unnecessary personnel away. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Local authorities should be advised if significant spillages cannot be contained.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

Methods for containment: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Dike the spilled material, where this is possible.
Methods for cleaning up

Use only non-sparking tools. All equipment used when handling the product must be grounded.

Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Dike far ahead of spill for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Collect in a non-combustible container for prompt disposal.

Never return spills in original containers for re-use. Clean surface thoroughly to remove residual contamination. Clean up in accordance with all applicable regulations.

J. T. Baker SOLUSORB® solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Handling

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Wear appropriate personal protective equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

Storage

Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children. Keep container tightly closed in a cool, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. Exposure Controls / Personal Protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>Material</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEPTANE (142-82-5)</td>
<td>STEL</td>
<td>500.0000 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>400.0000 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEPTANE (142-82-5)</td>
<td>PEL</td>
<td>500.0000 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2000.0000 mg/m3</td>
</tr>
</tbody>
</table>

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Explosion proof exhaust ventilation should be used.

Personal protective equipment

Eye / face protection

Chemical goggles and face shield are recommended.

Skin protection

Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapor cartridge and full facepiece.

General hygiene considerations

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance

Clear.
Color: Colorless.
Odor threshold: Not available.
Physical state: Liquid.
Form: Liquid.
pH: Not available.
Melting point: -131.8 °F (-90.6 °C)
Freezing point: -131.8 °F (-90.6 °C)
Boiling point: 210.2 °F (98.5 °C)
Flash point: 24.8 °F (-4 °C) Closed Cup
Evaporation rate: Not available.
Flammability limits in air, upper, % by volume: 6.7 %
Flammability limits in air, lower, % by volume: 1.05 %
Vapor density: 3.5
Specific gravity: 0.6837
Relative density: Not available.
Solubility (water): 0.003 g/l
Partition coefficient (n-octanol/water): 4.66
Auto-ignition temperature: 399 °F (203.9 °C)
Molecular weight: 100.2
Molecular formula: C7-H16

10. Chemical Stability & Reactivity Information
Chemical stability: Material is stable under normal conditions.
Conditions to avoid: Heat, flames and sparks.
Incompatible materials: Strong oxidizing agents.
Hazardous decomposition products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.
Possibility of hazardous reactions: Hazardous polymerization does not occur.

11. Toxicological Information

<table>
<thead>
<tr>
<th>Toxicological data</th>
<th>Product</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEPTANE (142-82-5)</td>
<td>Acute Inhalation LC50 Rat: 103 mg/l 4.00 Hours</td>
<td></td>
</tr>
</tbody>
</table>

Sensitization: Not a skin sensitizer.
Acute effects: Harmful or fatal if swallowed.
Local effects: Irritating to eyes, respiratory system and skin. High vapor concentrations may cause drowsiness and irritation of the eyes or respiratory tract.
Chronic effects: Organic solvents may be absorbed into the body by inhalation and ingestion and cause permanent damage to the nervous system, including the brain. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Skin corrosion/irritation: Causes skin irritation.
Epidemiology: No epidemiological data is available for this product.
Mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Neurological effects: High vapor/aerosol concentrations (attainable only at elevated temperatures) may cause central nervous system effects such as dizziness, drowsiness or headaches. Central and/or peripheral nervous system damage.

Reproductive effects: Contains no ingredient listed as toxic to reproduction

Teratogenicity: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.


12. Ecological Information

Ecotoxicological data

<table>
<thead>
<tr>
<th>Product</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEPTANE (142-82-5)</td>
<td>LC50 Amphipod (Chaetogammarus marinus): 0.2 mg/l 96.00 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Opossum shrimp (Americamysis bahia): 0.1 mg/l 96.00 hours</td>
</tr>
</tbody>
</table>

Ecotoxicity: Expected to be very toxic to aquatic organisms. May cause long-term adverse effects in the environment.

Environmental effects: Very toxic to aquatic life with long lasting effects. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Persistence and degradability: The product is moderately biodegradable. May evaporate quickly.

Partition coefficient (n-octanol/water): 4.66

13. Disposal Considerations

Waste codes: D001: Waste Flammable material with a flash point <140 F

Disposal instructions: Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.

Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container. Offer rinsed packaging material to local recycling facilities.

14. Transport Information

DOT

Basic shipping requirements:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN1206</td>
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<tr>
<td>Proper shipping name</td>
<td>Heptanes</td>
</tr>
<tr>
<td>Hazard class</td>
<td>3</td>
</tr>
<tr>
<td>Subsidiary hazard class</td>
<td>None</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Yes</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Yes</td>
</tr>
<tr>
<td>Additional information:</td>
<td>IB2, T4, TP1</td>
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</table>

Basic shipping requirements:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Labels required</td>
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<tr>
<td>Packaging exceptions</td>
<td>150</td>
</tr>
<tr>
<td>Packaging non bulk</td>
<td>202</td>
</tr>
</tbody>
</table>
Packaging

- Packaging bulk: 242
- Reportable quantity: 100
- ERG number: 128

IATA

Basic shipping requirements:

- UN number: 1206
- Proper shipping name: Heptanes
- Hazard class: 3
- Packing group: II
- Environmental hazards: Yes
- Marine pollutant: Yes
- Additional information:
  - ERG code: 3H

IMDG

Basic shipping requirements:

- UN number: 1206
- Proper shipping name: HEPTANES
- Hazard class: 3
- Packing group: II
- Environmental hazards: Yes
- Marine pollutant: Yes

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

US TSCA Section 12(b) Export Notification: Export Notification requirement/De minimis concentration

HEPTANE (CAS 142-82-5) 1.0 % One-Time Export Notification only.

CERCLA (Superfund) reportable quantity

HEPTANE: 100,000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

- Hazard categories:
  - Immediate Hazard - Yes
  - Delayed Hazard - No
  - Fire Hazard - Yes
  - Pressure Hazard - No
  - Reactivity Hazard - No

Section 311 hazardous chemical

Yes

Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Material name: HEPTANE

MSDS ID: H0584  Version #: 01  Revision date: 06-02-2011
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<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
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<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
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<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
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<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
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<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
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<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)*

**State regulations**

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

### US - Pennsylvania RTK - Hazardous Substances: Listed substance

HEPTANE (CAS 142-82-5) Listed.

**Saf-T-Data**

- Health: 2 - Moderate
- Flammability: 3 - Severe (Flammable)
- Reactivity: 0 - None
- Contact: 2 - Moderate
- Lab Protective Equip: DB - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
- Storage Color Code: R - Red (Flammable)

### 16. Labeling Info

**Label Hazard Warning**

DANGER

FLAMMABLE LIQUID AND VAPOR. Will be easily ignited by heat, spark or flames. Harmful or fatal if swallowed. Irritating to eyes, respiratory system and skin. High vapor concentrations may cause drowsiness and irritation of the eyes or respiratory tract.

**Label Precautions**

Keep away from heat, sparks and flame. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

**Label First Aid**

Immediately flush eyes with plenty of water for at least 15 minutes. Immediately flush skin with plenty of water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

### 17. Other Information

**NFPA ratings**

- Health: 2
- Flammability: 3
- Instability: 0
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Issue date
06-02-2011