IDENTIFICATION

MSDS Record Number: 4630772
Product Name(s): Isopentane
Product Identification: CAS NO.: 78-78-4
Date of MSDS: 2002-11-20
Currency Note: This MSDS was provided to CCOHS on 2005-06-10

MANUFACTURER/SUPPLIER INFORMATION

Company: ALBEMARLE CORP

MATERIAL SAFETY DATA

3.0.6 ETH 3127 Isopentane 11/20/02CY
ALBEMARLE CORPORATION
MATERIAL SAFETY DATA SHEET
451 FLORIDA STREET, BATON ROUGE, LA 70801
FOR EMERGENCIES ONLY - Phone (225) 344-7147
For Non-emergency Health & Safety Phone 1-800-535-3030
Representing Albemarle Foreign Sales Corporation for Export Sales
HMIS CLASSIFICATIONS: ISSUE DATE: 11/20/02
HEALTH: 3 SUPERSEDES: 04/15/99
FLAMMABILITY: 4
REACTIVITY: 0

PRODUCT IDENTIFICATION
PRODUCT NAME: Isopentane
CHEMICAL NAME: Isopentane
CAS NO.: 78-78-4
CHEMICAL FORMULA: (CH3)2CH2CH3
CHEMICAL FAMILY: 2-Methylbutane

SUMMARY OF HAZARDS
EXTREMELY FLAMMABLE!
Skin and eye irritant.
See "Other Health Effects.''

OSHA HAZARDOUS COMPONENTS

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS NO.</th>
<th>NOTE</th>
<th>EXPOSURE LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopentane</td>
<td>78-78-4</td>
<td>ND</td>
<td>1000 ppm TWA8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(OSHA); 600 ppm</td>
</tr>
</tbody>
</table>
n-Pentane 109-66-0 ND 1000 ppm TWA8 (OSHA); 600 ppm TWA8 (ACGIH)

EMERGENCY PHONE NUMBER PRODUCT NAME: Isopentane (225) 344-7147

3.0.6

OSHA HAZARDOUS COMPONENTS (Con't)

GOODS: Carcinogenicity listing of components at concentrations greater than or equal to 0.1% indicated by: =NTP; *=IARC; 
&=OSHA; *=OTHER; NL=Not Listed

CHEMICAL AND PHYSICAL PROPERTIES

APPEARANCE/OIDOR: Colorless liquid/pleasant odor.
BOILING POINT: 28C/82F.
VAPOR PRESSURE: 595 mm Hg 821C/70F.
VAPOR DENSITY: 2.5 (Air = 1).
SOLUBILITY IN WATER: Negligible.
SPECIFIC GRAVITY: 0.6248 @ 25C/77F.
EVAPORATION RATE: > 1 (Ethyl Ether = 1).
PERCENT VAPOR: 100%

FIRE AND EXPLOSION HAZARDS

FLASH POINT (METHOD): -51C/-60F (TCC).
FLAMMABLE LIMITS: LEL = 1.32% UEL = 8.3%
EXTINGUISHING MEDIA: Dry chemical, water spray (fog), foam or carbon dioxide.
HAZARDOUS THERMAL DECOMPOSITION PRODUCTS: Include oxides of carbon.
SPECIAL FIRE FIGHTING PROCEDURES: Use water spray or fog to cool exposed equipment and containers. Do not breathe smoke or vapors.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Highly explosive when exposed to heat or flame within flammable range.

REACTIVITY DATA

STABILITY: Stable.
CONDITIONS TO AVOID: Heat, sparks, flame and other sources of ignition.
MATERIALS TO AVOID: Oxygen, strong oxidizing agents.
HAZARDOUS POLYMERIZATION: Will not occur.

HEALTH HAZARDS

INHALATION: Symptoms of overexposure to vapors include drowsiness, weakness, headache, dizziness and nausea.
EYE CONTACT: Expected to be an eye irritant at very high vapor concentrations and from liquid contact.
SKIN CONTACT: Not expected to be absorbed in acutely toxic amounts. Expected to be a skin irritant at very high vapor concentrations and from liquid contact. Repeated or prolonged skin contact may cause defatting and dermatitis.
INGESTION: Not expected to be acutely toxic.
CHRONIC EFFECTS OF OVEREXPOSURE: None known.
OTHER HEALTH EFFECTS: This product contains isopentane.
Literature data indicate that isopentane causes cardiac stimulation and arrhythmia (irregular heart beat) in the laboratory animal.

EMERGENCY FIRST AID PROCEDURES

INHALATION: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

SKIN CONTACT: Flush skin with plenty of water. Get medical attention. Wash clothing before reuse.

EMERGENCY PHONE NUMBER  PRODUCT NAME: Isopentane
(229) 344-7147

EMERGENCY FIRST AID PROCEDURES (Con't)

INGESTION: If swallowed, give two glasses of water.

EXPOSURE CONTROL INFORMATION

EXPOSURE LIMITS: Not established by OSHA/ACGIH.

EYE PROTECTION: Chemical goggles.

PROTECTIVE GLOVES: Resistant to chemical penetration.

RESPIRATORY PROTECTION: NIOSH approved organic vapor respirator.

MECHANICAL VENTILATION: Recommended.

LOCAL EXHAUST VENTILATION: At source of vapor.

OTHER: If repeated or prolonged skin contact or contamination of clothing is likely, protective clothing should be worn.

ENVIRONMENTAL PROTECTION

SPILLS OR LEAKS: Ventilate area. Remove sources of ignition. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Take up small spills with dry chemical absorbent. Large spills may be taken up with pump or vacuum and finished off with dry chemical absorbent. May require excavation of contaminated soil.

DISPOSAL METHODS: Under the CERCLA/RCRA regulations currently in effect, this material is regulated as a hazardous waste or material. Therefore, it must be disposed of in a "permitted" hazardous waste facility in compliance with EPA and/or other applicable local, state, and federal regulations. It should be handled in a manner acceptable to good waste management practice.

STORAGE REQUIREMENTS: Store in cool, dry, well-ventilated area away from sources of ignition. Keep containers closed when not in use.

ADDITIONAL PRECAUTIONS OR COMMENTS

Do not breathe high concentrations of vapors. Ground containers when emptying or filling. Make sure liquid is stored in a pressure-type container so that temperature in excess of 84F will not cause liquid to dissipate and turn in to gaseous state.
REGULATORY INFORMATION

TSCA:
THIS MATERIAL IS IN COMPLIANCE WITH THE TOXIC SUBSTANCES
CONTROL ACT (15 USC 2601 - 2629).

DOT DESCRIPTION/PROPER SHIPPING NAME:
PENTANES

DOT HAZARD CLASS: 3 (FLAMMABLE)

DOT ID NUMBER: UN1265

DOT PACKING GROUP: II

HAZARD CATEGORIES FOR SARA 311/312 REPORTING ARE INDICATED BELOW:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>PHYSICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate (Acute)</td>
<td>Yes</td>
</tr>
<tr>
<td>Delayed (Chronic)</td>
<td>No</td>
</tr>
<tr>
<td>Fire</td>
<td>Yes</td>
</tr>
<tr>
<td>Sudden Release of Pressure</td>
<td>No</td>
</tr>
<tr>
<td>Reactive</td>
<td>No</td>
</tr>
<tr>
<td>Nuisance Mist/Dust Only</td>
<td>No</td>
</tr>
</tbody>
</table>

FOLLOWING ARE WHMIS CLASSIFICATIONS FOR THIS PRODUCT:

CLASS B, DIVISION 2

CLASS D, DIVISION 2B

WHMIS TRADE SECRECY EXEMPTION NUMBER: Not applicable.

WHMIS ASSESSMENT DATE: 11/19/02

11/20/02

EMERGENCY PHONE NUMBER PRODUCT NAME: Isopentane
(225) 344-7147

3.0.6

REGULATORY INFORMATION (Con't)

<table>
<thead>
<tr>
<th>COMPONENT NAME</th>
<th>CAS NO.</th>
<th>PERCENTAGE</th>
<th>REGULATION</th>
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</thead>
<tbody>
<tr>
<td>Isopentane</td>
<td>78-78-4</td>
<td>99.4</td>
<td>NJ RTK-SHH</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PA.RTK</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WHMIS-HC1</td>
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<tr>
<td>n-Pentane</td>
<td>109-66-0</td>
<td>3.0</td>
<td>NJ RTK-SHH</td>
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<td></td>
<td></td>
<td>WHMIS-CN1</td>
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<td></td>
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<td>PA.RTK</td>
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<td>WHMIS-HC1</td>
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<tr>
<td>n-Butane</td>
<td>106-97-8</td>
<td>0.2</td>
<td>NJ RTK-SHH</td>
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<td>Propane, 2,2-dimethyl-</td>
<td>463-82-1</td>
<td>0.1</td>
<td>NJ RTK-SHH</td>
</tr>
</tbody>
</table>

11/20/02

EMERGENCY PHONE NUMBER PRODUCT NAME: Isopentane
(225) 344-7147

3.0.6

MSDS prepared by: Health & Environment Department
Albemarle Corporation

FOR ADDITIONAL NONEMERGENCY PRODUCT INFORMATION, CONTACT:

HEALTH AND ENVIRONMENT DEPARTMENT
ALBEMARLE CORPORATION
451 FLORIDA ST.
BRATON ROUGE, LA. 70801
(800) 535-3030


THE RESPONSIBILITY TO PROVIDE A SAFE WORKPLACE REMAINS WITH THE USER. THE USER SHOULD CONSIDER THE HEALTH HAZARDS AND SAFETY INFORMATION CONTAINED HEREIN AS A GUIDE AND SHOULD TAKE THOSE PRECAUTIONS REQUIRED IN AN INDIVIDUAL OPERATION TO INSTRUCT EMPLOYEES AND TO DEVELOP WORK PRACTICE PROCEDURES FOR A SAFE WORK ENVIRONMENT.

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11/20/02

October, 2007 Issue

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