1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Code</th>
<th>43040186</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Name</td>
<td>Shipley BPR Stripper</td>
</tr>
<tr>
<td>Manufacturer/Supplier</td>
<td>Shipley Company</td>
</tr>
<tr>
<td>Address</td>
<td>455 Forest St. Marlborough, Massachusetts 01752</td>
</tr>
<tr>
<td>Phone Number</td>
<td>(508) 481-7950</td>
</tr>
<tr>
<td>Emergency Phone Number</td>
<td>(508) 481-7950</td>
</tr>
<tr>
<td>Chemtrec #</td>
<td>(800) 424-9300</td>
</tr>
<tr>
<td>MSDS first issued</td>
<td>13 December 2001</td>
</tr>
<tr>
<td>MSDS data revised</td>
<td></td>
</tr>
<tr>
<td>Prepared By:</td>
<td>Environmental, Health &amp; Safety Department</td>
</tr>
<tr>
<td>Local Sales Company</td>
<td>Shipley Company, 455 Forest Street, Marlboro, MA 01752 (508-481-7950)</td>
</tr>
</tbody>
</table>

2. COMPOSITION/INFORMATION ON THE INGREDIENTS

Components without CAS numbers are Trade Secret

<table>
<thead>
<tr>
<th>Component Name</th>
<th>CAS# / Codes</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-methyl-2-pyrrolidinone</td>
<td>872-50-4</td>
<td>92.00 - 97.00</td>
</tr>
<tr>
<td>Pyrrolidinone Compound</td>
<td></td>
<td>3.00 - 8.00</td>
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</tbody>
</table>

3. HAZARD IDENTIFICATION

Main Hazards: - Irritant - Combustible - Skin - Eye - Respiratory System

Routes of Entry: Inhalation, ingestion, eye and skin contact, absorption.

Carcinogenic Status: Not considered carcinogenic by NTP, IARC and OSHA

Target Organs: - Skin - Eye - Respiratory System

Health Effects - Eyes: Liquid or vapor may cause conjunctival irritation and transient corneal damage.

Health Effects - Skin: Material may cause slight irritation on prolonged or repeated contact. Skin absorption may be a significant route for exposure. Repeated or prolonged contact may produce defatting of the skin leading to irritation and dermatitis.

Health Effects - Ingestion: Swallowing may have the following effects: - irritation of mouth, throat and digestive tract - nausea - vomiting

Health Effects - Inhalation: Exposure to vapor may have the following effects:
3. HAZARD IDENTIFICATION

- irritation of nose, throat and respiratory tract

4. FIRST AID MEASURES

First Aid - Eyes
Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

First Aid - Skin
Wash skin with water. Continue washing for at least 15 minutes. Obtain medical attention if blistering occurs or redness persists.

First Aid - Ingestion
Wash out mouth with water. Have victim drink 1-3 glasses of water to dilute stomach contents. Induce vomiting. Obtain medical attention. Never administer anything by mouth if a victim is losing consciousness, is unconscious or is convulsing.

First Aid - Inhalation
Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.

Advice to Physicians
Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media
Use water spray, foam, dry chemical or carbon dioxide. Keep containers and surroundings cool with water spray.

Special Fire-Fighting Procedures
This product may give rise to hazardous vapors in a fire. Vapors can travel a considerable distance to a source of ignition and result in flashback.

Unusual Fire & Explosion Hazards
Pressure may build up in closed containers with possible liberation of combustible vapors.

Protective Equipment for Fire-Fighting
Wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures
Contain and absorb using earth, sand or other inert material. Transfer into suitable containers for recovery or disposal. Finally flush area with plenty of water.

Personal Precautions
Wear appropriate protective clothing. Wear respiratory protection. Eliminate all sources of ignition.
6. ACCIDENTAL RELEASE MEASURES

Environmental Precautions
Prevent the material from entering drains or water courses.

7. HANDLING AND STORAGE

Handling
Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Keep container tightly closed when not in use.

Storage
Store in original containers. Store away from sources of heat or ignition. Storage area should be:
- cool
- dry
- well ventilated
- out of direct sunlight

Other
None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
1-methyl-2-pyrrolidinone
An exposure limit of 25 ppm is recommended. Can be absorbed through skin. An exposure limit of 75 ppm is recommended. (15min)

Engineering Control Measures
Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.

Respiratory Protection
Respiratory protection if there is a risk of exposure to high vapor concentrations. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

Hand Protection
Butyl rubber gloves. Other chemical resistant gloves may be recommended by your safety professional.

Eye Protection
Chemical goggles.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State
Liquid

Color
Natural, slightly white

Odor
Mild Amine

VOC (g/l)
1030

Specific Gravity
1.03

pH
Not applicable.

Boiling Range/Point (°C/F)
202/396
9. PHYSICAL AND CHEMICAL PROPERTIES

Flash Point (PMCC) (°C/F) 88 / 190
Explosion Limits (%) Lower limit 0.99
Solubility in Water Completely soluble.
Vapor Density (Air = 1) Heavier than air.
Evaporation Rate Slower than ether
Vapor Pressure 1-methyl-2-pyrrolidone: 0.5 at 25 °C.

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions.
Conditions to Avoid - High temperatures - Static discharge
Incompatibilities - Oxidizing agents - Acids - Reducing agents
Hazardous Polymerization Will not occur.
Hazardous Decomposition Products - carbon monoxide - carbon dioxide - oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

Acute Data 1-methyl-2-pyrrolidone: Dermal LD50 (rat) 8000mg/kg. Oral LD50 (rat) 3914mg/kg.
Chronic/Subchronic Data In a 2 year inhalation study, NMP did not cause any life-shortening or carcinogenic effects in rats at 0.04 or 0.4 mg/l (10 and 100 ppm respectively).
Genotoxicity NMP was not mutagenic when tested in bacterial or mammalian systems.
Reproductive/Developmental Toxicity In experimental studies with rats and mice, NMP was embryotoxic by oral and intraperitoneal routes at very high dose levels close to the LD50. In a dermal exposure study with rats, NMP was only embryotoxic at the high dose levels attributed to maternal toxicity. Several inhalation studies in rats did not reveal any indication of maternal or embryo toxicity.
Additional Data None known.

12. ECOLOGICAL INFORMATION

Mobility The product will dissolve rapidly in water. The product is poorly absorbed onto soils or sediments. The product will leach into soil.
12. ECOLOGICAL INFORMATION

Persistence/Degradability
The product is expected to be readily biodegradable.

Bio-accumulation
Product is not expected to bioaccumulate.

Ecotoxicity
The product may be harmful to aquatic organisms.

13. DISPOSAL CONSIDERATIONS

Product Disposal
Incineration is the recommended method of disposal. Dispose of in accordance with all applicable local and national regulations.

Container Disposal
Labels should not be removed from containers until they have been cleaned. Empty containers may contain hazardous residues. Dispose of containers with care.

14. TRANSPORT INFORMATION

DOT Ground:
Not Regulated per 49 CFR 173.150(f)(2)

UN Proper Shipping Name
Not Regulated

UN Class
Not applicable.

UN Number
Not applicable.

UN Packaging Group
Not applicable.

N.O.S. 1:
Not applicable.

N.O.S. 2:
Not applicable.

Subsidiary Risks
None.

CERCLA RQ
None.

Marine Pollutant
No.

15. REGULATORY INFORMATION

TSCA Listed
All components of this product are listed on the U.S. Toxic Substances Control Act Chemical Inventory (TSCA Inventory) or are exempted from listing because a Low Volume Exemption has been granted in accordance with 40 CFR 723.50.

TSCA Exemptions

TSCA Sec.12(b) Export Notification
U.S. exporters of this product are required to notify the U.S. Environmental Protection Agency (EPA) that a regulated substance(s) is leaving the U.S. market. This product contains the following substance(s) which are subject to Section 12(b) export notification:
- 1-Methyl-2-pyrrolidinone (CAS# 872-50-4)

WHMIS Classification
B.3, D.2.B.
15. REGULATORY INFORMATION

California Proposition 65
This product contains the following chemicals that have been found by the State of California to cause cancer, birth defects or other reproductive harm: - 1-methyl-2-pyrrolidinone

SARA TITLE III-Section 311/312 Categorization (40 CFR 370)
Immediate, delayed health hazard

SARA TITLE III-Section 313 (40 CFR 372)
This product contains a chemical which is listed in Section 313 at or above de minimis concentrations. The following listed chemicals are present (quantity present is found elsewhere on this MSDS):
- 1-methyl-2-pyrrolidinone (872-50-4)

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA Rating- FIRE</th>
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<tr>
<td>NFPA Rating- HEALTH</td>
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<tr>
<td>NFPA Rating- REACTIVITY</td>
<td>0</td>
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<tr>
<td>NFPA Rating- SPECIAL</td>
<td>None.</td>
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Revisions Highlighted

Abbreviations
- CAS#: Chemical Abstract Services Number
- ACGIH: American Conference of Governmental Industrial Hygienists
- OSHA: Occupational Safety and Health Administration
- TLV: Threshold Limit Value
- PEL: Permissible Exposure Limit
- STEL: Short Term Exposure Limit
- NTP: National Toxicology Program
- IARC: International Agency for Research on Cancer
- R: Risk
- S: Safety
- LD50: Lethal Dose 50%
- LC50: Lethal Concentration 50%
- BOD: Biological Oxygen Demand
- Koc: Soil Organic Carbon Partition Coefficient
- TLM: Median Tolerance Limit

Disclaimer
The data contained herein is based on information that Shipley Company believes to be reliable, but no expressed or implied warranty is made with regard to the accuracy of such data or its suitability for a given situation. Such data relates only to the specific product described and not to such products in combination with any other product and no agent of Shipley Company is authorized to vary any of such data. Shipley Company and its agents disclaim all liability for any action taken or foregone on reliance upon such data.