1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Code</th>
<th>38000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Name</td>
<td>MICROPOSIT THINNER TYPE P</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>
</tbody>
</table>

| Phone Number    | (508) 481-7950 |
| Emergency Phone Number | (508) 481-7950 |
| Chemtrec #      | (800) 424-9300 |
| MSDS first issued | 3 July 1996 |
| MSDS data revised | 7 August 1997 |
| Prepared By:    | Gregory S. Dripps |
| Local Sales Company | Shipley Company, 455 Forest Street, Marlboro, MA 01752 |

<table>
<thead>
<tr>
<th>Component Name</th>
<th>CAS# / Codes</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene glycol monomethyl ether acetate</td>
<td>108-98-6</td>
<td>100.00</td>
</tr>
</tbody>
</table>

2. COMPOSITION/INFORMATION ON THE INGREDIENTS

3. HAZARD IDENTIFICATION

   | Main Hazards          | - Irritant - Combustible - Nervous System - Skin - Eye - Kidney - Liver |
   | Routes of Entry       | Inhalation, ingestion, eye and skin contact, absorption. |
   | Carcinogenic Status   | Not considered carcinogenic by NTP, IARC and OSHA |
   | Target Organs         | - Nervous System - Skin - Eye - Liver - Kidney |
   | Health Effects - Eyes | Liquid or vapor may cause pain, transient irritation and superficial corneal effects. |
   | Health Effects - Skin | Material may cause slight irritation on prolonged or repeated contact. Repeated and/or prolonged contact may lead to: - drowsiness - liver damage - kidney damage |
   | Health Effects - Ingestion | A large dose may have the following effects: - drowsiness - liver damage - kidney damage |
   | Health Effects - Inhalation | Exposure to vapor at high concentrations may have the following effects: - irritation of nose, throat and respiratory tract - liver damage - kidney damage |

4. FIRST AID MEASURES
4. FIRST AID MEASURES (continued)

<table>
<thead>
<tr>
<th>First Aid - Eyes</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Aid - Skin</td>
<td>Wash skin with water. Obtain medical attention if blistering occurs or redness persists.</td>
</tr>
<tr>
<td>First Aid - Ingestion</td>
<td>Wash out mouth with water. Obtain medical attention.</td>
</tr>
<tr>
<td>First Aid - Inhalation</td>
<td>Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.</td>
</tr>
<tr>
<td>Advice to Physicians</td>
<td>Treat symptomatically.</td>
</tr>
</tbody>
</table>

5. FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Extinguishing Media</th>
<th>Use water spray, foam, dry chemical or carbon dioxide. Keep containers and surroundings cool with water spray.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Fire-Fighting Procedures</td>
<td>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.</td>
</tr>
<tr>
<td>Unusual Fire &amp; Explosion Hazards</td>
<td>Pressure may build up in closed containers with possible liberation of combustible vapors.</td>
</tr>
<tr>
<td>Protective Equipment for Fire-Fighting</td>
<td>Wear full protective clothing and self-contained breathing apparatus.</td>
</tr>
</tbody>
</table>

6. ACCIDENTAL RELEASE MEASURES

<table>
<thead>
<tr>
<th>Spill Procedures</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Precautions</td>
<td>Wear appropriate protective clothing. Wear respiratory protection. Eliminate all sources of ignition.</td>
</tr>
<tr>
<td>Environmental Precautions</td>
<td>Prevent the material from entering drains or water courses.</td>
</tr>
</tbody>
</table>

7. HANDLING AND STORAGE

<table>
<thead>
<tr>
<th>Handling</th>
<th>Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Keep container tightly closed when not in use.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage</td>
<td>Store in original containers. Store away from sources of heat or ignition. Storage area should be: - cool - dry - well ventilated - out of direct sunlight</td>
</tr>
<tr>
<td>Other</td>
<td>None known.</td>
</tr>
</tbody>
</table>

MSDS_US
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
1. Propylene glycol monomethyl ether acetate
   Manufacturer recommends 30ppm 8h TWA and 90ppm 15 min STEL.

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.

Eye Protection
   Chemical goggles.

Body Protection
   Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State
   Liquid

Color
   Clear

Odor
   Sweet

VOC (g/l)
   966.0

Specific Gravity
   0.966

pH
   Neutral

Boiling Range/Point (°C/F)
   145.8/295

Flash Point (PMCC) (°C/F)
   46 / 114

Explosion Limits (%)
   Lower limit 1.5 at 20 °C. Upper limit 7.0 at 20 °C.

Solubility in Water
   Insoluble.

Vapor Density (Air = 1)
   Heavier than air.

Evaporation Rate
   Slower than ether

Vapor Pressure
   Propylene Glycol Monomethyl Ether Acetate: 3.7 mmHg at 20 °C.

10. STABILITY AND REACTIVITY

Stability
   Stable under normal conditions.

Conditions to Avoid
   - High temperatures - Static discharge

Incompatibilities
   - Oxidizing agents

Hazardous Polymerization
   Will not occur.

Hazardous Decomposition Products
   None known.
### 11. TOXICOLOGICAL INFORMATION

**Acute Data**  
Propylene Glycol Monomethyl Ether Acetate: Oral LD50 (rat) mg/kg, Dermal LD50 (rabbit) 5000mg/kg.

**Chronic/Subchronic Data**  
No data.

**Genotoxicity**  
It was not mutagenic when tested in bacterial or mammalian systems.

**Reproductive/Developmental Toxicity**  
Developmental effects were seen in laboratory animals only at dose levels that were maternally toxic.

**Additional Data**  
None known.

### 12. ECOLOGICAL INFORMATION

**Mobility**  
Propylene Glycol Monomethyl Ether Acetate: Koc is 0 - 50.

**Persistence/Degradability**  
The product is partially or slowly biodegradable. BOD20 greater than 40%.

**Bio-accumulation**  
No data.

**Ecotoxicity**  
The product is rated as practically non-toxic to aquatic species. Tests on the following species gave a LC50 of 161mg/litre: - fathead minnows  
Tests on the following species gave a LC50 of 408mg/litre: - daphnia

### 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** Flammable liquid, n.o.s.

**UN Class** (3) Flammable Liquid

**UN Number** UN1993

**UN Packaging Group** III

**N.O.S. 1:**  
Propylene Glycol Monomethyl Ether Acetate

**N.O.S. 2:** None.

**Subsidiary Risks** CLASS 3 - 31(c)

**ADR/RID Substance Identification Number**
14. TRANSPORT INFORMATION (continued)

CERCLA RQ  
Marine Pollutant  
None.  
No.

15. REGULATORY INFORMATION

TSCA Listed  
Yes

TSCA Exemptions

WHMIS Classification

MA Right To Know Law

California Proposition 65

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

SARA TITLE III-Section 313 (40 CFR 372)
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Rating- FIRE  
2

NFPA Rating- HEALTH  
2

NFPA Rating- REACTIVITY  
0

NFPA Rating- SPECIAL  
None.

Revisions Highlighted

Abbreviations

Occupational Exposure Standards

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


TLM: Median Tolerance Limit

Disclaimer

The data contained herein is based on information that Shipley Company believes to be reliable, but
16. OTHER INFORMATION (continued)

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.