MATERIAL SAFETY DATA SHEET
TRIM® MicroSol® 685

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name TRIM® MicroSol® 685
Material type High Lubricity Semisynthetic Metalworking Fluid
Classification/synonym(s) Microemulsion/None
Product use Coolant and lubricant in metal removal processes
Manufacturer address MASTER CHEMICAL CORPORATION
501 West Boundary
Perrysburg, OH 43551-1200
Emergency telephone 419-874-7902 Fax number 419-874-0684

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>OTHER LIMITS RECOM.</th>
<th>CAS #</th>
<th>% RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severely hydrotreated petroleum oil</td>
<td>5mg/m³ (mist)</td>
<td>5mg/m³ (mist)</td>
<td>none</td>
<td>64742-52-5</td>
<td>25-35</td>
</tr>
<tr>
<td>Monochloroamine</td>
<td>3ppm</td>
<td>3ppm</td>
<td>none</td>
<td>141-43-5</td>
<td>1-10</td>
</tr>
</tbody>
</table>

The exact chemical identities and percentages of the raw materials used in TRIM® MicroSol® 685 are trade secrets. This information is being withheld as provided for in the Occupational Safety and Health Administration's Hazard Communication Rule (29 CFR 1910.1200).

3. HAZARDS IDENTIFICATION

Emergency overview Amber liquid
No immediate hazard
Fire may produce oxides of carbon and nitrogen

POTENTIAL HEALTH EFFECTS

Acute effects of overexposure
- Eye contact: Transient irritation
- Skin contact: Possible defatting, nonirritant as working solution, nonsensitizer
- Inhalation: Nontoxic
- Ingestion: Nontoxic

Chronic effects of overexposure
None currently known

Product/Ingredients listed as carcinogen or potential carcinogen?
NTP Annual Report No IARC Monographs No
OSHA No

Signs and symptoms of exposure
None
Medical conditions generally aggravated by exposure

None known

4. FIRST AID MEASURES

Emergency and first aid procedures

Eyes
Flush immediately with cool, clean water for at least 15 minutes

Skin
Wash with mild soap and warm water

Inhalation
Move to fresh air

Ingestion
If large quantities are ingested, contact a physician

In every case get medical attention as required

5. FIRE FIGHTING MEASURES

Flash point (test method)
>204°F (>96°C) (COC)

Flammable limits
Not determined

Extinguishing media
As appropriate for the surrounding fire: water (flood with water), dry chemical, CO₂, or "alcohol" foam

Special fire fighting procedures
None

Unusual fire and explosion hazards
None

6. ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled
Mop up or use dry absorbent

7. HANDLING AND STORAGE

Precautions to be taken in handling and storing
Avoid contact with eyes. Avoid prolonged or repeated skin contact with the concentrate. Wash thoroughly after handling. Do not swallow. Refer to container labels.

Other precautions
This product contains amine. Do not add nitrite or other nitrosating agents to this product due to the potential for nitrosamine formation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection
(Specify type)
None

Ventilation
Local exhaust
Not normally required
Mechanical (General)
General room ventilation should be sufficient
Special
None
Other
None

Protective gloves
None necessary with working solution

Other protective equipment
None

Eye protection
Safety glasses
Exposure limits

None established by ACGIH or OSHA for product as whole
Refer to Section 2

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance**: Amber liquid
- **Odor**: Mild amine
- **pH of concentrate**: 9.5 - 10.5
- **Typical operating pH**: 9.5 - 10.0
- **Boiling point (ASTM D86)**: 209°F (98°C)
- **Freezing point**: -1°F (-18°C)
- **Solubility in water**: Soluble
- **Specific gravity (H₂O=1)**: 0.999
- **V.O.C. Content (EPA Method 24)**: 2.35 lbs/gal
- **Evaporation rate (butyl acetate=1)**: 0.018

10. STABILITY AND REACTIVITY

- **Stability**: Stable
- **Conditions to avoid**: None
- **Incompatibility**
  - Materials to avoid: Strong acids and oxidizers
- **Hazardous combustion or decomposition products**: Thermal decomposition (fire) may produce oxides of carbon and nitrogen
- **Hazardous polymerization**: Will not occur
- **Conditions to avoid**: None

11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Study</th>
<th>Test Animal</th>
<th>Concentrate</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute inhalation toxicity</td>
<td>Rat</td>
<td>---</td>
<td>nonirritant</td>
</tr>
<tr>
<td>Acute oral toxicity</td>
<td>Rat</td>
<td>nontoxic</td>
<td>nontoxic</td>
</tr>
<tr>
<td>LD₅₀ &gt; 5000mg/kg</td>
<td></td>
<td></td>
<td>10% Solution</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>Rabbit</td>
<td>nontoxic</td>
<td>nontoxic</td>
</tr>
<tr>
<td>LD₅₀ &gt; 2000mg/kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary skin irritation</td>
<td>Rabbit</td>
<td>nonirritant</td>
<td>nonirritant</td>
</tr>
<tr>
<td>PDI index = 4.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary eye irritation</td>
<td>Rabbit</td>
<td>irritant</td>
<td>nonirritant</td>
</tr>
<tr>
<td>Repeated insult patch</td>
<td>Human volunteers</td>
<td>---</td>
<td>nonirritant</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

No data available
13. DISPOSAL CONSIDERATIONS

Waste disposal method  Must comply with local, state, and federal regulations. If pre-treatment is needed, chemical treatment or ultrafiltration may be used. Contact Master Chemical Tech Line (1-800-537-3365) for assistance.

14. TRANSPORT INFORMATION

Department of Transportation  DOT Hazard Class: None

TRIM® MicroSol® 685 is not classified as a hazardous material by DOT.

15. REGULATORY INFORMATION

Resource Conservation and Recovery Act  EPA Hazardous Waste Number(s): None

TRIM® MicroSol® 685 is not classified as a hazardous waste by EPA.

Toxic Substances Control Act  All TRIM® MicroSol® 685 ingredients are listed on the TSCA Inventory of Chemical Substances.

Superfund Amendments and Reauthorization Act of 1986  TRIM® MicroSol® 685 does not contain any Section 302/304 Extremely Hazardous Substances or Section 313 Toxic Chemicals.

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>HMIS Hazard Index</th>
<th>NFPA RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Concentrate</td>
</tr>
<tr>
<td>(Health)</td>
<td>H = 1</td>
</tr>
<tr>
<td>(Fire)</td>
<td>F = 0</td>
</tr>
<tr>
<td>(Reactivity)</td>
<td>R = 0</td>
</tr>
<tr>
<td>(Personal Protection)</td>
<td>PP = A</td>
</tr>
</tbody>
</table>

Concentrate

Typical Working Solution

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>H = 1</td>
<td>F = 0</td>
<td>R = 0</td>
<td>PP = A</td>
</tr>
</tbody>
</table>

Special hazards = none

Key  0 = minimal  1 = slight  2 = moderate  3 = serious  4 = severe

This information is intended solely for the use of individuals trained in the particular system.

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Date of preparation  February 4, 2009
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: TRIM® Whamex™

Material type: Machine Tool Sump and System Cleaner

Classification/synonym(s): None/None

Product use: Removal of metalworking fluids from machine tools, parts, and floors

Manufacturer address: MASTER CHEMICAL CORPORATION
501 West Boundary
Perrysburg, OH 43551-1200

Emergency telephone: 419-874-7902  Fax number: 419-874-0684

2. COMPOSITION/INFORMATION ON INGREDIENTS

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<tr>
<th>COMPONENT</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>OSHA RECOM.</th>
<th>CAS #</th>
<th>% RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethanolamine</td>
<td>none</td>
<td>5 mg/m³</td>
<td>none</td>
<td>102-71-6</td>
<td>1-10</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>3 ppm</td>
<td>3 ppm</td>
<td>none</td>
<td>141-43-5</td>
<td>1-10</td>
</tr>
</tbody>
</table>

The exact chemical identities and percentages of the raw materials used in TRIM® Whamex™ are trade secrets. This information is being withheld as provided for in the Occupational Safety and Health Administration’s Hazard Communication Rule (29 CFR 1910.1200).

3. HAZARDS IDENTIFICATION

Emergency overview: Yellow liquid
Fire may produce oxides of carbon and nitrogen

POTENTIAL HEALTH EFFECTS

Acute effects of overexposure
- Eye contact: Irritant
- Skin contact: Irritant
- Inhalation: Nontoxic
- Ingestion: Nontoxic
- Skin absorption: Nontoxic

Chronic effects of overexposure: None currently known

Product/Ingredients listed as carcinogen or potential carcinogen? NTP Annual Report: No  IARC Monographs: No  OSHA: No

Signs and symptoms of exposure: None

Medical conditions generally aggravated by exposure: None known
4. **FIRST AID MEASURES**

**Emergency and first aid procedures**

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Skin</th>
<th>Inhalation</th>
<th>Ingestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flush immediately with cool, clean water for at least 15 minutes.</td>
<td>Wash with mild soap and warm water.</td>
<td>Move to fresh air.</td>
<td>If large quantities are ingested, contact a physician.</td>
</tr>
</tbody>
</table>

In every case get medical attention as required.

5. **FIRE FIGHTING MEASURES**

**Flash point (test method)** None to boiling (COC) **Flammable limits** Not determined

**Extinguishing media** As appropriate for the surrounding fire: water (flood with water), dry chemical, CO₂, or “alcohol” foam

**Special fire fighting procedures** None **Unusual fire and explosion hazards** None

6. **ACCIDENTAL RELEASE MEASURES**

**Steps to be taken if material is released or spilled** Mop up or use dry absorbent

7. **HANDLING AND STORAGE**

**Precautions to be taken in handling and storing** Avoid contact with eyes. Avoid prolonged or repeated skin contact with the concentrate. Wash thoroughly after handling. Do not swallow. Refer to container labels.

**Other precautions** This product contains amine. Do not add nitrite or other nitrosating agents to this product due to the potential for nitrosamine formation.

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Respiratory protection (Specify type)** None

**Ventilation** Local exhaust Not normally required

Mechanical (General) General room ventilation should be sufficient

Special None

Other None

**Protective gloves** Rubber, neoprene, or vinyl

**Other protective equipment** None

**Eye protection** Safety glasses

**Exposure limits** None established by ACGIH or OSHA for product as whole

Refer to Section 2
9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Yellow liquid
Odor: Mild
pH of concentrate (as range): 10.5 - 11.0
Typical operating pH (as range): 10.0 - 10.6
Boiling point (ASTM D86): 209°F (98°C)
Freezing point: 5°F (-15°C)
Solubility in water: Soluble
Specific gravity (H₂O = 1): 1.080
V.O.C. Content (EPA Method): 1.23 lbs/gal
Evaporation rate (butyl acetate = 1): 0.034

10. STABILITY AND REACTIVITY

Stability: Stable
Conditions to avoid: None
Incompatibility (materials to avoid): Strong oxidizers and acids
Hazardous combustion or decomposition products: Thermal decomposition (fire) may produce oxides of carbon and nitrogen
Hazardous polymerization: Will not occur
Conditions to avoid: None

11. TOXICOLOGICAL INFORMATION

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<td>Rat</td>
<td>---</td>
<td>nontoxic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LC₅₀ &gt; 205mg/l</td>
</tr>
<tr>
<td>Acute oral toxicity</td>
<td>Rat</td>
<td>nontoxic</td>
<td>nontoxic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD₅₀ &gt; 5000mg/kg</td>
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</tr>
<tr>
<td>Primary skin irritation</td>
<td>Rabbit</td>
<td>nonirritant</td>
<td>nonirritant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PDI index =3.67</td>
<td></td>
</tr>
<tr>
<td>Primary eye irritation</td>
<td>Rabbit</td>
<td>irritant</td>
<td>nonirritant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeated insult patch</td>
<td>Human</td>
<td>---</td>
<td>irritant</td>
</tr>
<tr>
<td></td>
<td>volunteers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

No data available
13. DISPOSAL CONSIDERATIONS

Waste disposal method  Must comply with local, state, and federal regulations. If pre-treatment is needed, chemical treatment or ultrafiltration may be used. Contact Master Chemical Tech Line (1-800-537-3365) for assistance.

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**HMIS Hazard Index**

<table>
<thead>
<tr>
<th>(Health)</th>
<th>H</th>
<th>F</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentrate</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**NFPA Rating**

<table>
<thead>
<tr>
<th>(Health)</th>
<th>H</th>
<th>F</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentrate</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**PP** = B (safety glasses and gloves)

**Special hazards = none**

**NFPA Rating**

<table>
<thead>
<tr>
<th>(Health)</th>
<th>H</th>
<th>F</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Working Solution</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**PP** = B (safety glasses and gloves)

**Special hazards = none**

**Key** 0 = minimal 1 = slight 2 = moderate 3 = serious 4 = severe

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Date of preparation  December 22, 2008