MicroSol® 685lf

High-lubricity, Low-foam Semisynthetic

TRIM® MicroSol® 685lf is a high-lubricity, low-foaming, semisynthetic microemulsion coolant. The formula offers the performance of a heavy-duty soluble oil with the cleanliness of a semisynthetic. It provides excellent cooling and mechanical lubricity, along with the machine friendly characteristics you expect from a premium TRIM® coolant.

MicroSol

For ultimate performance:

TRIM® MicroSol® semisynthetic microemulsion coolants deliver high-performance lubricity and ultimately lowers costs. Achieve precision parts, exceptional tool life, extended sump life, assured regulatory compliance, and greater profitability with the MicroSol product just right for your production.

Designed to meet the rigorous demands of the aerospace, medical, automotive, or high production, precision parts manufacturing industries, there's a MicroSol to answer your concerns, ramp up your production, and boost your bottom line.

Choose MicroSol 685lf:

- Low foam and low mist make it an excellent choice for high-pressure, high-volume coolant systems
- Excellent alternative to chlorinated soluble oils on high-silica aluminum alloys
- Reduces oil mist and residues often associated with high-lubricity alternatives
- Has exceptional sump life without the use of tank side additives
- Provides superior corrosion inhibition on all ferrous and nonferrous metals
- Forms stable microemulsion in hard water environments
- Keeps machines very clean while leaving a soft fluid film for ease of cleaning and reduced maintenance
- Uses standard metalworking recycling and disposal techniques
- Performs well where traditional soluble oils may not cool sufficiently

MicroSol 685lf especially for:

Applications — cooling, high-pressure, high-volume

Metals — aluminum, cast iron, composites, copper alloys, ferrous metals, magnesium alloys, nonferrous metals, plastics, stainless steels, and steels

Industries — aerospace and medical

MicroSol 685lf is free of — nitrites, phenols, sulfurized EP additives, and triazine
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**Application Guidelines**
- MicroSol 685lf performs well where traditional soluble oils may not cool sufficiently.
- In mixed-metal situations, concentration control is critical to fight galvanic corrosion (7.5% plus).
- Running at or above 7.5% offers the best sump life and corrosion inhibition.
- For additional product application information, including performance optimization, please contact your Master Fluid Solutions’ Authorized Distributor at [https://www.2trim.us/distributors.php](https://www.2trim.us/distributors.php), your District Sales Manager, or call our Tech Line at 1-800-537-3365.

**Physical Properties Typical Data**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color (Concentrate)</td>
<td>Amber</td>
</tr>
<tr>
<td>Color (Working Solution)</td>
<td>White</td>
</tr>
<tr>
<td>Odor (Concentrate)</td>
<td>Mild chemical</td>
</tr>
<tr>
<td>Form (Concentrate)</td>
<td>Liquid</td>
</tr>
<tr>
<td>Flash Point (Concentrate) (ASTM D93-08)</td>
<td>&gt; 199°F</td>
</tr>
<tr>
<td>pH (Concentrate as Range)</td>
<td>9.7 - 10.7</td>
</tr>
<tr>
<td>pH (Typical Operating as Range)</td>
<td>9.4 - 10.0</td>
</tr>
<tr>
<td>Coolant Refractometer Factor</td>
<td>1.2</td>
</tr>
<tr>
<td>Titration Factor (CGF-1 Titration Kit)</td>
<td>0.76</td>
</tr>
<tr>
<td>Digital Titration Factor</td>
<td>0.0204</td>
</tr>
<tr>
<td>V.O.C. Content (ASTM E1868-10)</td>
<td>135 g/l</td>
</tr>
</tbody>
</table>

**Recommended Metalworking Concentrations**

<table>
<thead>
<tr>
<th>Duty</th>
<th>Concentration Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light duty</td>
<td>4.0% - 6.5%</td>
</tr>
<tr>
<td>Moderate duty</td>
<td>6.5% - 8.5%</td>
</tr>
<tr>
<td>Heavy duty</td>
<td>8.5% - 10.0%</td>
</tr>
<tr>
<td>Design Concentration Range</td>
<td>4.0% - 10.0%</td>
</tr>
</tbody>
</table>

**Concentration by % Brix**

![Concentration by % Brix graph](image)

% Concentration = Refractive Reading x Refractive Factor
Coolant Refractometer Factor % Brix = 1.2

**Concentration by Titration**

![Concentration by Titration graph](image)

% Concentration = No. of Drops x Titration Factor
Titration Factor = 0.76

**Health and Safety**

See the most recent SDS at [https://2trim.us/s/?i=1176-0-en-US-US](https://2trim.us/s/?i=1176-0-en-US-US)
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Mixing Instructions

- Recommended usage concentration in water: 4.0% - 10.0%.
- To help ensure the best possible working solution, add the required amount of concentrate to the required amount of water (never the reverse) and stir until uniformly mixed.
- Use premixed coolant as makeup to improve coolant performance and reduce coolant purchases. The makeup you select should balance the water evaporation rate with the coolant carryout rate. Use our Coolant Makeup Calculator to find the best ratio for your machine: apps.masterfluidsolutions.com/makeup/.
- Use mineral-free water to improve sump life and corrosion inhibition while reducing carryoff and concentrate usage.

Additional Information

- Use Master STAGES™ Whamex™ for a quick and thorough precleaning of your machine tool and coolant system.
- Consult Master Fluid Solutions before using on any metals or applications not specifically recommended.
- This product should not be mixed with other metalworking fluids or metalworking fluid additives, except as recommended by Master Fluid Solutions, as this may reduce overall performance, result in adverse health effects, or damage the machine tool and parts. If contamination occurs, please contact Master Fluid Solutions for recommended action.
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