E850

Premium Emulsion

TRIM® E850 is a proprietary blend of new “green” vegetable-based technology and premium traditional lubricity additives to yield a very high-performance, easy-to-maintain metal removal fluid. This premium emulsion is operator friendly because of its mild contact nature and low chemical initial-charge odor. E850 is robust enough to deliver extended useful life and avoid rancid odors normally associated with traditional emulsions. The unparalleled physical lubricity delivers exceptional surface finish on difficult-to-machine aluminum alloys, exotics, stainless, and high-tensile strength steels.

Emulsions

A case for E850:
Geared up for production:
A major US producer of precision commercial and military aerospace components has seen impressive results using E850 for their classified titanium forging machining of undercarriage steering equipment for military aircraft such as the F-16, F-22, F-35, AH-64, B1, C130, CH47, UH 60, S70i, and T38.

After a successful trial, another general machining company in the USA made the switch to E850 because they needed a chlorine-free product and chose E850 for its superior lubricity on stainless steel and aluminum.

Choose E850:
- Delivers unparalleled lubricity
- Very long sump life and low carryoff rates result in low operating cost
- Low product odor
- Mild operator contact properties
- Provides superior results in a wide range of operations
- Excellent corrosion resistance on both nonferrous and ferrous materials
- Superior wetting and penetration to the point of cut
- Soft fluid film protects ways, chucks, and tool holders
- Easily removed from parts for easy cleanup before assembly, painting, or plating operations
- High performance without the use of chlorinated paraffins

E850 especially for:
Applications — boring, centerless grinding, cutting, deep hole drilling, drilling, grinding, heavy-duty machining center work, high-pressure, high-volume, high-speed milling, high-speed turning, milling, reaming, roll threading, sawing, tapping, thread forming, thread rolling, and turning
Metals — aerospace aluminum alloys, brass, bronze, cast aluminum, composites, copper, exotic alloys, heat-treated steel, high tensile-strength steel, high-carbon steel, nickel alloys, nonferrous metals, plastics, stainless steels, steels, and titanium
Industries — aerospace, automotive, and energy
E850 is free of — boron, chlorine, copper, halogens, nitrites, phenols, and triazine

Performance soars with E850.
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Application Guidelines

- Maintaining concentration from 7.5% - 10% provides the best sump life and corrosion inhibition.
- E850 is not recommended on magnesium or other reactive materials.
- For additional product application information, including performance optimization, please contact your Master Fluid Solutions' Authorized Distributor at 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</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 (Typical Operating as Range)</td>
<td>8.8 - 9.8</td>
</tr>
<tr>
<td>Coolant Refractometer Factor</td>
<td>0.9</td>
</tr>
<tr>
<td>Titration Factor (CGF-1 Titration Kit)</td>
<td>0.97</td>
</tr>
<tr>
<td>Digital Titration Factor</td>
<td>0.0294</td>
</tr>
<tr>
<td>V.O.C. Content (ASTM E1868-10)</td>
<td>197 g/l</td>
</tr>
</tbody>
</table>

Recommended Metalworking Concentrations

- Light duty: 5.0% - 8.0%
- Moderate duty: 8.0% - 10.0%
- Heavy duty: 10.0% - 15.0%
- Design Concentration Range: 5.0% - 15.0%

Concentration by % Brix

![Graph showing concentration by % Brix]

% Concentration = Refractive Reading x Refractive Factor
Coolant Refractometer Factor % Brix = 0.9

Concentration by Titration

![Graph showing concentration by titration]

% Concentration = No. of Drops x Titration Factor
Titration Factor = 0.97

Health and Safety

See the most recent SDS at https://2trim.us/s/?i=1075-0-en-US-US
E850

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Mixing Instructions

- Recommended usage concentration in water: 5.0% - 15.0%.
- 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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- Master STAGES™ and Whamex™ are trademarks of Master Chemical Corporation d/b/a Master Fluid Solutions.
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