METALGUARD® A40
Light-Duty OAT Extended Life Additive Package
for use with Ethylene Glycol

Description and Applications
METALGUARD A40 is an all-organic OAT (organic acid technology) inhibitor package. It contains no borate, nitrate, nitrite, phosphate or silicate. METALGUARD A40 contains organic acids and azoles to provide complete metal protection and guard the cooling system against corrosion and cavitation-erosion. In addition, it contains additives to minimize hot surface scaling while also preventing heat transfer surface fouling due to minor oil leakage. Antifreeze made with METALGUARD A40 can be mixed with most major brands of OAT, HOAT and conventional antifreezes without precipitation problems.

METALGUARD A40, when blended correctly, produces antifreeze that can meet the ASTM D3306 specification for light-duty coolants. Antifreeze/coolant made with METALGUARD A40 provides a service life of 5 years or 150,000 miles, and is suitable for use in foreign and domestic passenger cars, vans, SUVs and light trucks requiring extended life antifreeze.

This extended life additive system can be used with either virgin or high-quality reclaimed glycol from distillation units. WEBA Technology recommends that you send a sample of any non-virgin glycols that you are considering for use with METALGUARD A40 to a laboratory for analysis in accordance with ASTM E1177, and send us the results. We will help you determine if the glycol is suitable for use, with or without pre-treatment.

Typical Product Specifications
Specifications below are tested using virgin glycol.
As concentrated METALGUARD A40 inhibitor package:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td>Clear, light yellow to amber</td>
</tr>
<tr>
<td>Specific Gravity; 70°F/21°C</td>
<td>1.000-1.060</td>
</tr>
<tr>
<td>pH</td>
<td>9.5-10.5</td>
</tr>
</tbody>
</table>

As concentrated Antifreeze - LIGHT DUTY

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity; 70°F/21°C</td>
<td>1.110-1.145</td>
</tr>
<tr>
<td>pH</td>
<td>8.0-9.5 (ASTM 7.0-11.0)</td>
</tr>
<tr>
<td>Reserve Alkalinity</td>
<td>3 ml min.</td>
</tr>
<tr>
<td>Freeze Point @ 50%</td>
<td>-34°F (-36°C) max.</td>
</tr>
</tbody>
</table>
**METALGUARD® A40**

**Blending and Use Instructions**

**Blending:** The METALGUARD A40 additive package is more viscous than other WEBA additives and the viscosity will increase at lower temperatures. This is normal. Inspect the drum after opening. If there is separation then gently mix the drum. DO NOT mix the drum unless you see separation. DO NOT use high-speed agitation.

To make antifreeze concentrate: First charge the desired quantity of glycol to the blending tank. Heat the glycol to 50°F (10°C) or higher. For reclaimed glycols adjust its pH range to a range of 7.0-9.0, as required. Maintain the minimum temperature throughout the blending procedure. Good agitation is vital to making a consistent and proper product; agitate for 30-60 minutes after the addition of the additive package.

- **General Use:** 2.2% by volume
- **Light-Duty Engine Coolant:** 3.8% by volume
- **Premium, 5yr/150K mile Coolant:** 5.0% by volume

To make 50/50 (50% glycol/50% water):

For 50/50 the additive is considered as part of the water percent. To achieve a proper freeze point you will need to adjust accordingly.

- **General Use:** 1.1% by volume
- **Light-Duty Engine Coolant:** 1.9% by volume
- **Premium, 5yr/150K mile Coolant:** 2.5% by volume

**Antifoam:** Add the appropriate amount of antifoam to allow your product to pass a foam test. Use 0.01% by volume or 0.5 gallon (1.90L) per 5000 gallons (18,925L) of antifreeze concentrate (0.25 gallons/10.95L in 50/50). More may be needed depending upon glycol-base quality. Antifoam may be purchased in 5-gallon (18.93L) pails from WEBA Technology.

**Dye:** As the last step add the color of dye that you wish to use. If you need help determining dye colors or use rates you may contact us. We can help you to select the proper color for the antifreeze you wish to produce; or connect directly with Robert Koch Industries www.kochcolor.com, our preferred dye company.

**Testing:** Test your finished product to be sure it conforms to specifications. See below paragraph on quality control.

**Storage:** Store concentrated the additive package above of 60°F (15.5°C) at all times. If a container arrives very cold to your warehouse, place it in a hot room for 1-2 days then stir thoroughly prior to use. Once a container is opened there is a possibility of some evaporation of the water base, so close the container tightly after each use. High temperatures, above 90°F (32°C), for an extended period of time may also cause degradation of the inhibitors. If you are in an area of the country with continuous high heat store the additive in a cooler area of your warehouse.

**Water Quality And Dilution:** When antifreeze concentrate is diluted to 50% by volume with water, the water of dilution must be of acceptable quality. Deionized water is the best to use, but other sources of water are acceptable as long as they contain less than 100 ppm total hardness measured as calcium and magnesium compounds. Higher hardness levels may cause excessive inhibitor consumption, scale deposits and metal pitting.

**Quality Control Procedures:** WEBA Technology strongly recommends that all antifreeze producers have an internal, complete quality control program in place for manufacturing and testing of all products made for sale.

The specifications listed in this bulletin are based on antifreeze produced with WEBA's additive packages, virgin glycol and deionized water. To confirm that your finished products meet the required industry specifications, WEBA recommends that you test your glycol and finished products at an accredited laboratory. WEBA will warrant our additive packages only if this procedure and the recommended blending and storage procedures are properly followed and documented. In addition, the glycol or other base fluid used with our additive systems should meet industry or ASTM standards unless specifically exempted in our literature.

**Technical Contact Information**

**WEBA Technology**
Tel: 1-681-265-2314 or 1-608-819-8806
Fax: 608-237-2054
www.webacorp.com

900 Cummings Center, Suite 226-U
Beverly, MA 01915 USA

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