

# METALGUARD® A40N

## Heavy-Duty Extended Service Antifreeze Inhibitor Package

### Overview

METALGUARD A40N is a heavy-duty, extended life inhibitor package containing organic acids, azoles, and nitrite. It does not contain borate, nitrate, phosphate or silicate. It will protect all engine metals from corrosion and will control cylinder liner pitting.

When blended in accordance with our instructions (see next page), using ethylene or propylene glycol meeting ASTM E1177, METALGUARD A40N produces antifreeze that can meet ASTM D3306 and ASTM D6210.

Antifreeze made with METALGUARD A40N, in heavy-duty applications, provides a service life of at least 600,000 miles with the addition of an METALGUARD A40N-EXT Extender when needed; typically, at the half-life. If necessary, extender can be added when analysis of the coolant indicates that nitrite has fallen below the recommended concentration or pH has dropped significantly. For off-road, heavy-duty applications, it will provide a service life up to 12,000 hours, with the addition of the extender when needed.



### Features & Benefits

- Can be used for all heavy-duty diesel, gasoline and natural gas engine cooling systems.
- All-organic formulation plus nitrite for wet-sleeve cylinder protection.
- Does not contain nitrate, silicate, phosphate or borate.
- Eliminates the need for SCAs and chemically charged filters.
- Provides long-term compatibility with hoses, seals and gaskets.
- Contains anti-scalants and dispersants to prevent scaling and fouling of heat exchange surfaces.
- Can be blended with ethylene glycol, propylene glycol or glycerin bases.
- On-Road Service Life: 600,000 miles with a comprehensive coolant maintenance program.
- Off-Road Applications 12,000 hours or 6 years whichever comes first. Proper monitoring at oil changes for pH, precipitation, solids, cloudiness or contamination is necessary.



### Specifications

Formulated to meet:

- ASTM D3306
- ASTM D6210
- TMC of ATA RP 329/338



### Industry Applications

**Used to make antifreeze/coolant for:**

- On-Road Heavy-Duty Diesel Trucks
- Heavy-Duty Stationary Engines
- Natural-gas-powered heavy-duty on and off road equipment.



### Quality Control & Technical Support

WEBA's products must pass rigorous quality control tests. They are tested for conformance with product specifications and industry standards. Certificates of analysis are provided with every shipment. WEBA Technology can help with many technical questions relating to the finished fluids our additives create, types of glycol and other bases, and assist with issues on products containing our inhibitor packages.



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## Product Specifications

### As concentrated inhibitor package:

Visual	Clear to slightly cloudy, clear to amber liquid
Specific Gravity; 70°F/21.1°C	1.045-1.085
pH	9.5-10.5

### As antifreeze concentrate, ethylene glycol base:

Specific Gravity; 70°F/21.1°C	1.110-1.145
pH	8.0-9.5
Reserve Alkalinity	6 ml min
Freeze Point @ 50%	-34°F (-36°C) max.



## Blending & Use Instructions

**METALGUARD A40N** should be blended with glycols meeting ASTM E1177 EG-1, EG-2, PG-1 or PG-2 requirements. Dilution water should be deionized or at least meet the limits given in Table X1.1 in the appendix of ASTM D6210 standard.

**Blending:** The METALGUARD A40N 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. 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.

**Use Rate:** Based on the quantity being manufactured, add 5.0% by volume

**To make Premix:** Option 1: dilute concentrate 50% by volume. Option 2: If you are making premix (ready-to-use) from scratch, the METALGUARD additive, antifoam, dye and bitterant are considered part of the water portion. The concentration (percentage) of water will need to be adjusted to achieve a proper freeze point as required by ASTM D3306.

**Use Rate:** Based on the quantity being manufactured, add 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/0.95L 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.

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

**Storage:** Store concentrated additive packages above 60°F (15.5°C). If a container arrives cold to your warehouse, immediately place it in a hot room for 1-2 days then stir thoroughly prior to use. Alternatively, heating blankets may be used (follow local regulations regarding their usage) Once a container is opened there is a possibility of the liquid phase evaporating, so close the container tightly after each use. High temperatures, above 100°F (38°C) for an extended duration, 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 with water, the water for dilution must be of acceptable quality. Deionized water is the best to use, but other sources of water are acceptable if they meet the water quality limits outlined in both ASTM D3306 and ASTM D6210.

**Quality Control Procedures:** WEBA 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 products 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.