METALGUARD® A85

Heavy-Duty, Nitrite Free Extended Life Antifreeze Inhibitor

Overview

METALGUARD A85 is the latest generation of coolant chemistry developed specifically for heavy-duty applications requiring ethylene glycol-based, extended life coolant with OAT technology. METALGUARD A85 was developed for superior performance and durability under the more demanding engine operating conditions. It has higher temperature stability and excellent heat transfer properties for applications like CNG (Compressed Natural Gas), EGR (Exhaust Gas Recirculation) and SCR (Selective Catalytic Reduction) systems. It can be used in all types of heavy-duty engines and is excellent for light-duty and automotive service.

As an all-organic formulation, METALGUARD A85 does not contain any conventional inorganic salts (nitrite, nitrate, silicate, phosphate and borate), amines or 2-ethylhexanoic acid. The technology minimizes deposit formation, protects all types of metals, has high compatibility with non-metal components (hoses, seals, and gaskets), and provides outstanding cylinder liner cavitation/pitting protection.

With a formal heavy-duty engine coolant maintenance program, the coolant can deliver cooling system protection for up-to 1,000,000 miles of on-road use (8 years or 20,000 hours of off-road use) without the use of standard Supplemental Coolant Additives (SCAs). Through laboratory testing, and if required, a concentrated booster is available for restoring the inhibitor content to keep the coolant in proper balance.

Features & Benefits

- Can be used for all heavy-duty diesel, gasoline and natural gas engine cooling systems.
- 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.
- Does not contain: nitrite, nitrate, silicate, phosphate, borate, amines or 2-ethylhexanoic acid.
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- Can be blended with ethylene glycol, propylene glycol or glycerin bases.
- On-Road Service Life: 1,000,000 miles with a comprehensive coolant maintenance program.
- Off-Road Applications 20,000 hours or 8 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 D4985**
- **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.
- Gas and Oil Field Industrial Coolant
- Light-Duty Applications

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.

WEBA TECHNOLOGY

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METALGUARD® A85

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Product Specifications

As concentrated inhibitor package:	
Visual	Clear to slightly cloudy, clear to amber liquid
Specific Gravity, 70ºF/21.1ºC	1.185-1.200
pH	9.5-10.2
As antifreeze concentrate, ethylene glycol base:	
Specific Gravity; 70ºF/21.1ºC	1.110-1.145
pH, 50%	8.2-8.8
Freeze Point, 50%	-36ºC (-34ºF) max.
Reserve Alkalinity	6 min.

Blending & Use Instructions

METALGUARD A85 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: Upon opening the drum of additive, stir thoroughly. Normally METALGUARD additives remain homogeneous solutions, but stirring before use is a prudent safeguard against any precipitation. Do not use high speed agitation. If you use only a portion of the drum (i.e. a few gallons at a time) you need to mix the drum of additive prior to pulling out the required amount. If you use the entire drum to make a bulk blend you do not need to mix the drum prior to use.

To make antifreeze concentrate: First charge the desired quantity of glycol to the blending tank. Heat the glycol to 50ºF (10ºC) 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 8.0% by volume of the additive package.

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 4.0% by volume of the additive package.

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 60ºF (15.5ºC). 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 100ºF (38ºC) 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. It is recommended that antifreeze/coolant be inspected at 90-day intervals to detect any obvious contamination, phase separation, cloudiness, precipitation or significant pH change. A full analysis of coolant is recommended at least every 300,000 miles, or when visual, pH checks or other monitored physical properties indicate a problem.

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.