

WEBA TECHNOLOGY

Antifreeze Additive Packages

WEBA Technology Corp. makes inhibitor systems for blending glycol and water to make antifreeze/coolants that cover most industry and OEM specifications. Our additive packages allow the finished fluid manufacturer to make everything from automotive light-duty to heavy-duty diesel antifreezes, both conventional and extended life. Our formulations include traditional conventional light and heavy duty, Hybrid Organic Acid Technology (HOAT), NOAT and OAT (Organic acid technology), Poly-organic Acid Technology (POAT) and Multi-Functional Organic Acid Technology for both light and heavy-duty applications. Our series of OAT inhibitors are the latest technology for making long-lasting coolants. The METALGUARD® antifreeze additive packages provide proven corrosion prevention, fluid longevity and ease of blending. WEBA Corp's comprehensive technical expertise and customer support services will assist with problems, the pursuit of new business and new product development.

METALGUARD A81 is Formulated to meet these Industry Standards

- ASTM D3306
- ASTM D4985
- ASTM D6210
- TMC of ATA RP 302A
- TMC of ATA RP329/330

Nearly all of OEM automotive light-duty and heavy-duty specifications are patterned after or identical to the ASTM standard specifications given above. For individual OEM specification compliance contact your sales representative. Note that the ASTM specifications listed include the key performance tests (ASTM D1384, D4340, D1881, D2570, D2809).

Technical Support

WEBA Corp can answer questions about ASTM standards and industry specifications as well as help with many other questions relating to antifreeze and glycols. To confirm that your finished product meets the required industry specifications, WEBA's laboratory can help you with problem solving and testing associated with any products containing our inhibitor package.

Quality Control

WEBA Corp's additive packages must pass all our quality control tests prior to shipment. They are tested for conformance with product specifications and industry standards. Certificate of analysis are provided with every shipment. Complete ASTM performance tests are available by request.

METALGUARD® A81

Conventional Heavy-Duty SCA-Precharged Antifreeze Inhibitor with High Nitrite and MBT for use with Ethylene & Propylene Glycol

Product Description and Applications

METALGUARD A81 is a conventional, heavy-duty, fully-formulated and SCA-precharged additive package that allows antifreeze producers to make a finished product that meets the most demanding industry specifications, including ASTM D 6210/6211 and RP 329/330 of the Technology and Maintenance Council of the American Trucking Association. METALGUARD A81 contains the initial charge of supplemental coolant additive, meeting the requirements for pre-charged coolants. No additional SCAs need to be added to the finished coolant. METALGUARD A81 is a top-quality conventional phosphate and amine free formulation.

METALGUARD A81 contains a minimum of 2400 ppm nitrite in antifreeze concentrate (1200 ppm in pre-diluted coolant) which is one of the requirements to meet ASTM D6210. If a combination of nitrite and molybdate is required by the specification for the coolant application we recommend WEBA Corp's METALGUARD A90. For conventional automotive coolants the proper inhibitor to use is METALGUARD A70.

METALGUARD A81 is a sophisticated, multi component additive system which employs synergistic combinations of inhibitors to provide you with the best corrosion protection available for heavy-duty engine cooling systems, whether in vehicles or stationary engines. It is a very durable additive package with a strong reserve alkalinity, and a substantial combination of inorganic acid salts to protect steel, cast iron, aluminum and solder. Copper, brass and other copper alloys are protected by a high level of azoles. METALGUARD A81 is a low-silicate formulation meeting ASTM D4985 and contains antiscalants and dispersants to prevent scaling and fouling of heat exchange surfaces.

METALGUARD A81 can be blended with either ethylene or propylene glycol, and can also be used with either virgin or high-quality reclaimed glycol from distillation units, reverse osmosis membranes, and most flocculation/filtration systems. WEBA Corp recommends that you send a sample of any non-virgin glycols that you are considering for use with any of WEBA Corp's additive packages to a laboratory for testing and forward the results to us. We will help you determine if any pretreatment will be necessary prior to blending antifreeze to ensure compliance with all required specifications.

Typical Product Specifications

As concentrated METALGUARD A81 additive package:

| | |
|-----------------------------|-------------------------------------|
| Visual | Clear to cloudy, pale yellow liquid |
| Specific Gravity; 70°F/21°C | 1.195-1.225 |
| pH | 11.5-12.8 |

As concentrated Antifreeze (EG and METALGUARD A81*):

| | |
|-----------------------------|---------------|
| Specific Gravity; 70°F/21°C | 1.110-1.145 |
| pH | 9.9-10.9 |
| Reserve Alkalinity | 10 ml min. |
| Freeze Point @ 50% | -34°F max. |
| Nitrite | 2400 ppm min. |

*Specifications available by request for propylene glycol base.

METALGUARD® A81

Blending and Use Instructions

Blending: Upon opening the drum, stir thoroughly. 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 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.

Based on the quantity of glycol being treated, add 2.2% by volume of the additive package while agitating or circulating glycol. Use 2.0 x 55-gallon drums (110 gallons) per 5,000 gallons (416 liters per 18,925 liters of glycol).

To make 50/50 (50% glycol/50% water): Follow glycol instructions in concentrate section above, and then add 1.1% by volume of the additive package using the previous instructions. Use 1.0 x 55 gallon drum (55 gallons) per 5,000 gallons (208 liters per 18,925 liters) of 50% glycol/50% water mixture.

Antifoam: Although this additive package has antifoam as part of the formulation, depending upon your glycol base additional antifoam may need to be added to pass ASTM foam test. Antifoam may be purchased in 5-gallon (18.93L) pails from WEBA Technology.

Dye: If you purchase undyed additive, the last step is to 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 make. Dye can be ordered from WEBA Technology or from the dye company of your choice. We recommend and use dyes from Robert Koch Industries www.kochcolor.com.

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, immediately 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 the liquid phase evaporating, 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 Corp 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 Corp's additive packages, virgin glycol and deionized water. To confirm that your finished products meet the required industry specifications, WEBA Corp recommends that you test your glycol and finished products at an accredited laboratory. WEBA Corp 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

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