

WEBA TECHNOLOGY

Antifreeze Additive Packages

WEBA Technology 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 Technology's comprehensive technical expertise and customer support services will assist with problems, the pursuit of new business and new product development.

METALGUARD A80 is Formulated to meet the following Specifications

- ASTM D 3306
- ASTM D 4985
- ASTM D 6210/11
- TMC of ATA RP329/330/338

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 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'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® A80

Heavy-Duty, Poly/Multi-Organic Extended Life Additive Package Formulated for use with Ethylene or Propylene Glycol

Description and Applications

METALGUARD A80 is Poly-Organic/Multi-Organic additive package that allows you to make antifreeze meeting ASTM D6210, as well as ASTM D3306 and ASTM D4985. It contains no amine, phosphate, silicate, borate, nitrate, nitrite, or 2-ethylhexanoic acid. METALGUARD A80 meets the performance requirements of ASTM D6210 without nitrite or nitrite/molybdate, but still provides wet sleeve cylinder liner cavitation protection due to its unique formulation. A major advantage of this type of additive system is that it provides total cooling system protection for 600,000 on-road miles without the use of additive-containing coolant filters or supplemental coolant additives (SCAs). The addition of a METALGUARD A80 extender at 300,000 miles, if needed, is the only maintenance recommended, although, it is recommended that a sample of the coolant be inspected quarterly to detect any problems such as significant color change, pH change, phase separation, precipitation, cloudiness, or obvious contamination. With the same maintenance program, A80 will provide protection for 12,000 hours or 6 years whichever comes first.

METALGUARD A80's all organic formulation also has several other advantages. It is compatible with most types of coolant technologies including conventional inorganic acid salt formulations, most straight organic acid (OAT) formulations, hybrid organic acid formulations (HOAT), nitrated OAT formulations (NOAT) and other multi-organic acid formulations. Antifreeze/coolant made with METALGUARD A80 is also much less sensitive to water hardness chemicals, which cause scale formation, as a result of its low chemical reactivity. This low reactivity also makes antifreeze/coolant made with METALGUARD A80 much less sensitive to contaminants such as motor oil and other coolants.

Antifreeze made with METALGUARD A80 will be suitable for passenger cars, vans, SUVs, light trucks, heavy-duty vehicles and many off-road applications such as stationary engine cooling systems. It will provide superior corrosion protection for all cooling system metals, including aluminum, steel, cast iron, copper, brass and solder alloys. Compliance with the many dissimilar antifreeze specifications in today's market also make it important to know what your additive package does not contain. METALGUARD A80 allows you to meet most of these exclusion requirements.

It is recommended that METALGUARD A80 be blended with virgin ethylene/propylene glycol or with high-quality reclaimed ethylene/propylene glycol from vacuum distillation units meeting ASTM E1177. Deionized water should be used to make pre-diluted coolants.

Typical Product Specifications

Specifications below are tested using virgin glycol.

As concentrated METALGUARD A80 inhibitor package:

Visual	Clear to cloudy, light gold liquid
Specific Gravity; 70°F/21°C	1.157-1.167
pH	8.8-9.8

As concentrated Antifreeze* Ethylene Glycol Propylene Glycol

Specific Gravity; 70°F	1.110-1.115	1.040-1.045
pH	8.0-9.0	8.0-9.0
Freeze Point; 50%	-34°F (-36°C) max.	-28°F (-33°C) max.

* treat rate at standard 5% by volume (see next page)

METALGUARD® A80

Blending and Use Instructions

Blending: Upon opening the container stir gently, if required. Do not use high-speed agitation. If you use only a portion of the drum (i.e. a few gallons at a time) gently 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.

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

Premium Heavy-Duty Applications: Based on the quantity being manufactured, **add 8.0% 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.

Minimum Use Rate: Based on the quantity being manufactured, **add 2.5% by volume.**

Premium Heavy-Duty Applications: Based on the quantity being manufactured, **add 4.0% 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 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 50°F (10°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 some evaporation of the water base, so close the container tightly after each use. High temperatures, above 100°F (38°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. Dilution water should be deionized or at least meet the limits given in Table XI.I in the Appendix of ASTM D6210. 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

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