ANTIFREEZE 101

West Marine®

ANTIFREEZE 101

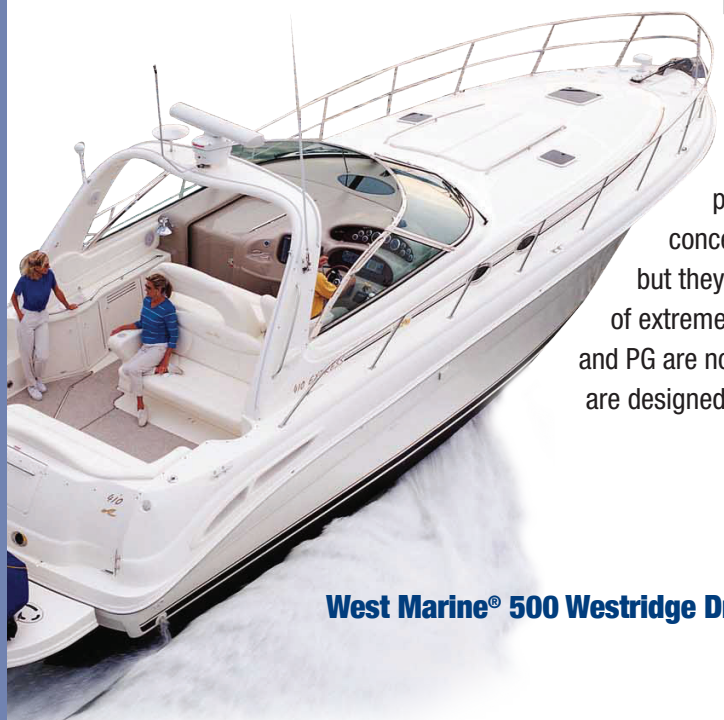
Understanding Burst Points and Freeze Points

The burst point of an antifreeze is the temperature at which a sealed copper pipe filled with the undiluted product will burst. Burst points are a standard created by the plumbing industry in the 1930s to indicate the relative strength of antifreeze. They have since become synonymous with the name of antifreeze products used for winter storage. Burst points help consumers choose the proper product based on the lowest expected temperatures for their specific area.

A freeze point is the temperature at which ice crystals begin to form in the undiluted product. Freeze points are the measurements given when using refractometers and hydrometers. Note: Most refractometers provide readings on both a PG and an EG scale, so it is important to use the PG reading when testing PG antifreeze. Hydrometers are either made to provide PG or EG readings. It is critical to test this product with a hydrometer specifically designed to provide PG readings. Most hydrometers are purchased at auto supply stores and are designed for use with EG, so they cannot be used to test PG antifreeze. A PG refractometer will not give accurate readings for antifreeze containing alcohol and PG. Keep in mind that it is normal to see readings that may vary by several degrees from the product's stated freeze point based on ambient temperature or the age of the product. For example, the freeze point of the -50°F PG product is +12°F, but it is not unusual to see readings in a range of +12°F to +16°F. A -50°F antifreeze containing alcohol and PG will have a freeze point of +25°F, but it is not unusual to see readings in a range of +21°F to +25°F. Shake PG antifreeze well before testing as the heavier PG component may have settled toward the bottom.

Because the stored engine or water system is not in use, preventing ice crystals is not necessary, and to do so would require the use of a more expensive product with a higher PG content. As an example, the -50°F PG antifreeze has a freeze point of +12°F while the -100°F antifreeze has a freeze point of about -60°F.

However, as the temperature drops the solution begins to solidify and expand, putting pressure on pipes that can lead to damage. This is why it is important to select an antifreeze that will provide burst protection appropriate for a specific region's lowest anticipated temperatures. Products providing lower burst point temperatures contain higher concentrations of PG and are thus more expensive, but they will provide the protection needed in the event of extreme weather. Note: Antifreeze containing alcohol and PG are not recommend for engine use; these formulas are designed for use in water systems.



West Marine® 500 Westridge Dr., Watsonville, CA 95076 • Made in USA

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SEAFIT -50°F (-46°C) MARINE & RV WATER SYSTEM ANTIFREEZE - NEW BLEND

West Marine #14823330 1-gallon, 210 Per Pallet **West Marine #14823348 55-gallon, 4 Per Pallet**

-50°F (-46°C) SEAFIT Marine & RV Water System Antifreeze provides cold weather protection for drinking water tanks and systems and holding tanks at an attractive price. The alcohol and propylene glycol formula will not harm aluminum, copper, brass or solder, with a bright pink color for excellent blow-through visibility. This product is ready-to-use; do not dilute it.

SEAFIT -50°F (-46°C) Marine & RV Water System Antifreeze will provide burst protection to -50°F (-46°C) and freeze protection within a range of +6°F (-14°C) to +10°F (-12°C). Because it contains alcohol and propylene glycol, neither a PG nor an alcohol refractometer will provide an accurate freeze point reading. Although the reading is not accurate, the freeze point reading will range from +21°F to +25°F. Note: This product is not recommended for use in engines; the alcohol blend may evaporate more quickly than -50°F Pure Ocean Marine Antifreeze and thus could lead to less protection in late winter. To protect engines, we recommend West Marine Pure Oceans Marine Antifreeze or West Marine Super Concentrated Antifreeze. Note: The burst point of PVC pipes used in most drinking water systems is about -10°F (-23°C). When winterizing water systems in regions where temperatures can fall below -10°F (-23°C), we recommend using West Marine Pure Oceans -100°F (-73°C) Marine Antifreeze.

WEST MARINE® PURE OCEANS -50°F (-46°C) MARINE ANTIFREEZE

West Marine #499848 1-gallon, 210 Per Pallet **West Marine #363770 55-gallon, 4 Per Pallet**

West Marine Pure Oceans -50°F (-46°C) Marine Antifreeze provides the ultimate in cold weather and corrosion protection for drinking water systems and all engines. Its premium additive package prevents corrosion of aluminum, copper, brass and solder, but will not harm rubber, seals or hose materials. The 3X-died bright pink color provides excellent blow-through visibility. Formulated with virgin, non-toxic, USP-grade ingredients, it is tasteless and contains no alcohol. This product is ready-to-use; do not dilute it.

West Marine Pure Oceans -50°F (-46°C) Marine Antifreeze will provide burst protection to -50°F (-46°C) and freeze protection within a range of +12°F to +16°F (-11°C to -9°C). When testing with a refractometer or hydrometer designed for use with propylene glycol, freeze point readings on the PG scale will range from +12°F to +16°F. Note: The burst point of PVC pipes used in most drinking water systems is about -10°F (-23°C). When winterizing water systems in regions where temperatures can fall below -10°F (-23°C), we recommend using West Marine Pure Oceans -100°F (-73°C) Marine Antifreeze or West Marine Super Concentrated Antifreeze.

WEST MARINE® PURE OCEANS -60°F (-51°C) MARINE ANTIFREEZE

West Marine #3556610 1-gallon, 210 Per Pallet

West Marine Pure Oceans -60°F (-51°C) Marine Antifreeze provides the ultimate in cold weather and corrosion protection for drinking water systems and all engines. Its premium additive package prevents corrosion of aluminum, copper, brass and solder, but will not harm rubber, seals or hose materials. The 3X-died purple color provides excellent blow-through visibility. Formulated with virgin, non-toxic, USP-grade ingredients, it is tasteless and contains no alcohol. This product is ready-to-use; do not dilute it.

West Marine Pure Oceans -60°F (-51°C) Marine Antifreeze will provide burst protection to -60°F (-51°C) and freeze protection within a range of +7°F to +10°F (-14°C to -12°C). When testing with a refractometer or with a hydrometer designed for use with PG, freeze point readings on the PG scale will range from +7°F to +10°F. When winterizing water systems with plastic pipes in regions where temperatures can fall below -10°F (-23°C), we recommend using West Marine Pure Oceans -100°F (-73°C) Marine Antifreeze or West Marine Super Concentrated Antifreeze.

WEST MARINE® PURE OCEANS -100°F (-73°C) MARINE ANTIFREEZE

West Marine #363798 1-gallon, 210 Per Pallet **West Marine #208341 55-gallon, 4 Per Pallet**

West Marine Pure Oceans -100°F (-73°C) Marine Antifreeze provides the ultimate in extreme cold weather and corrosion protection for drinking water systems and all engines. Its premium additive package prevents corrosion of aluminum, copper, brass and solder, but will not harm rubber, seals or hose materials. The 3X-died blue-green color provides excellent blow-through visibility. Formulated with virgin, non-toxic, USP-grade ingredients, it is tasteless and contains no alcohol. This product is ready-to-use or may be diluted – please follow label directions for dilution ratios.

West Marine Pure Oceans -100°F (-73°C) Marine Antifreeze will provide burst protection to -100°F (-73°C) and freeze protection within a range of -58°F to -63°F (-50°C to - 52°C). When testing with a refractometer or hydrometer designed for use with PG, freeze point readings on the PG scale will range from -58°F to -63°F.

WEST MARINE® PURE OCEANS SUPER CONCENTRATED MARINE ANTIFREEZE

West Marine #14823355 1-gallon, 210 Per Pallet **West Marine #7781024 55-gallon, 4 Per Pallet**

Now available in a Concentrated version – just add water to 1-gallon container. West Marine Pure Oceans Super Concentrated Marine Antifreeze provides the ultimate in extreme cold weather and corrosion protection for drinking water systems and all engines. Its premium additive package prevents corrosion of aluminum, copper, brass and solder, but will not harm rubber, seals or hose materials. The 3X-died bright pink color provides excellent blow-through visibility. Formulated with virgin, non-toxic, USP-grade ingredients, it is tasteless and contains no alcohol. This product is ready-to-use or may be diluted – please follow label directions for dilution ratios.

Used full strength, West Marine Pure Oceans Super Concentrated Marine Antifreeze provides burst point protection to -200°F (-129°C) and freeze protection within a range of -98°F to -103°F (-72°C to -75°C); mixed 1 part concentrate to 1 part water provides burst point protection to -100°F (-73°C) and freeze protection within a range of -58°F to -63°F (-50°C to -52°C); mixed 1 part concentrate to 2 parts water provides burst point protection to -50°F (-46°C) and freeze protection within a range of +12°F to +16°F (-11°C to -9°C) . Note: Most PG refractometers and/or hydrometers will not provide freeze point readings below -70°F.

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