

Proactive Tips for Using Ethanol-Enhanced Fuels

At Yamaha, we get lots of questions about preventing the headaches ethanol-enhanced fuels can potentially cause in boat engines. Here's some background, and things you can do to help prevent any issues in your boat's fuel system.

Ethanol has hygroscopic solvency properties. That's a fancy term for A) it attracts and absorbs water, and B) it loosens debris in your fuel system. To help combat the issues these properties may cause, follow these simple four steps:



Phase Separation

1). **Install a Yamaha 10-micron water separating fuel filter.** It helps remove the water ethanol fuels attract and the debris or corrosion the ethanol may loosen. Change the filter element every 50 hours, and always carry a spare on-board.

10-Micron Water Separating Fuel Filter

Provides superior filtration ahead of the engine's onboard filters and injectors. Large filtering and water capture areas help maintain flow rate necessary for large engines. Also available in a "mini-10" version specifically for outboards 115hp and under. Highly recommended for all two-stroke and four-stroke EFI outboards and two-stroke HPDI's. Also excellent for carbureted engines. Stainless Steel Assemblies- MAR-SPRTR-HD-SS, Aluminum Assemblies- MAR-SEPAR-AT-OR, and mini-10 Assemblies- MAR-MINIF-LT-AS are available from your local Yamaha dealer.



2). **Consistently use Yamaha Fuel Stabilizer and Conditioner Plus in every tankful.** Its non-alcohol formula helps prevent phase separation of the water from the fuel and it will help protect fuel system components from the corrosive damage ethanol-based fuels can cause in boats.

Fuel Stabilizer & Conditioner PLUS

Strongly recommended for E-10 fuels, this alcohol-free formula helps prevent fuel oxidation and phase separation from moist, rich air. When used continuously, it keeps fuel fresh, potent and free from gum and varnish for up to one year of storage. Its metal filmers provide extensive protection for steel and aluminum components.



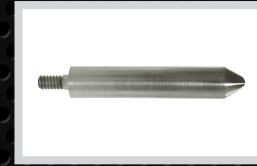
Steel rods submerged in an oil bath with a high dose of synthetic salts



Treated with competitor's fuel stabilizer
Result: Rust



Treated with competitor's enzyme stabilizer
Result: Extreme Rust



Treated with Yamalube® Fuel Stabilizer & Conditioner PLUS
Result: Clean and Rust-Free

**Fuel Stabilizer Plus test results from Spectrum Corporation.*

3). **Use Ring Free Plus in every tank,** and don't regularly exceed 87 octane fuel unless specified by the manufacturer. Using fuel above the recommended octane level for your engine can lead to incomplete combustion and contribute to carbon build up. Not only will Ring Free Plus remove carbon, gum, and varnish and help keep your fuel system clean, it protects the fuel system's internal components from corrosion.

Ring Free PLUS

Exclusive, synthetic PLUS formula provides superior deposit control, cleaning fuel injectors, carburetors, intake valves, intake ports and combustion chambers. Featuring metal filmers, it also protects silver solder, copper, aluminum and steel in a fuel system from the corrosive affects of ethanol sulfate salt.



4). **If possible, buy your gas where they sell a lot of it.** It's fresher that way. Be sure to add the appropriate amount of additives listed above before you fill up, each and every time.

There's more to know.

You can get all the tips from our website's Frequently Asked Questions at www.yamaha-motor.com/faq, or contact our Customer Relations Department at 866-894-1626 if you have further questions. To find a dealer near you, visit the [dealer locator](#).

