



TECH EXCHANGE

SUBJECTS: 1. Yamaha Outboards and Ethanol Fuel Blends – All Models

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Yamaha Outboards and Ethanol Fuel Blends – All Models

As of spring 2006, most gasoline refiners will switch to ethanol-blended fuels. This may present a challenge for boat builders, dealers, and boaters in the months ahead. Until recently, refiners have primarily used the chemical MTBE (Methyl Tertiary Butyl Ether) as an additive “to oxygenate” fuel, thereby, reducing emissions. Unfortunately, the chemical has been associated with ground water pollution. As a result, most refineries have chosen to remove it from their blends. Using ethanol in place of MTBE solves the ground water issue, since ethanol has a very short life in the environment before it is broken down chemically by nature.

Properties

Both consumers and those in the boating industry should be aware of the following characteristics of ethanol, even when blended in ratios of as little as 10 percent:

1. Ethanol attracts and absorbs moisture from the air. That means boaters will likely face more fuel contamination issues from water absorbed through their fuel tank vents.
2. Ethanol can dissolve some solid materials (e.g., varnish or even oxidation in steel and aluminum tanks) commonly found in fuel tanks, thereby contaminating the fuel. Additionally, it can loosen any corrosion or particulate matter in the fuel system.
3. In some cases, ethanol has been known to dissolve components of the fuel system itself (e.g., fiberglass fuel tanks). However, modern fuel hose is made to withstand the effects of ethanol exposure.
4. Ethanol blends can react chemically with MTBE fuel blends, causing additional contamination.

Recommendations:

Fuel blends using as much as 10 percent ethanol are appropriate for use in all of Yamaha’s current outboard models. Yamaha does not recommend the use of fuels with higher concentrations of ethanol (e.g., E85, which contains 85 percent ethanol) or any other fuel blend that contains more than 10 percent ethanol.

In addition, Yamaha recommends boat builder partners and boaters (as applicable) take the following steps to mitigate the potential impact of ethanol in motor fuel:

1. Use fuel system components that are compatible with ethanol blends or replace those in use that are not compatible (e.g., fiberglass fuel tanks).
2. Avoid co-mingling MTBE and ethanol-blended fuels. As a precaution, boaters should be advised to use only one supplier for fuel purchases in the months ahead to ensure constancy during the industry changeover period from MTBE to ethanol blends.
3. Install a Yamaha mini-10™ filter or 10-Micron filter. The 10-Micron filter is designed for use on boats with Yamaha outboards. The smaller mini-10 is designed for smaller boats with engines 115hp and under. Both Yamaha products filter out contaminants and separate water from fuel. The mini-10 features an aluminum head and is made from coated steel inside and painted steel outside to combat corrosion. The 10-Micron filter features either an aluminum or stainless steel head and is also made from coated interior and painted exterior steel. Both meet all U.S. Coast Guard and ABYC (American Boat and Yacht Council) standards.
4. Consumers should be encouraged to carry spare filter cartridges in the event the filter element becomes clogged with contaminants while the outboard is in use.

Related Considerations:

All Yamaha products, rigging, accessories and parts, including Yamalube lubricants and fuel stabilizers are compatible with fuel blends using up to 10 percent ethanol.