



KERNEL OF TRUTH:
Figure out if your
boat will have prob-
lems with ethanol
before you fill up.

Gas Pains

DON'T LET ETHANOL RUIN YOUR FISHING SEASON.

AS IF STRATOSPHERIC GAS PRICES aren't bad enough, now the scourge of E10 is coming to a fuel dock near you. E10 is the label on the pump that means the fuel coming out of the nozzle is just 90-percent gasoline. The rest is ethanol, a highly refined grain alcohol made from corn that helps gas burn cleaner. It's in there because federal law outlawed the carcinogenic MTBE additive. But what does it mean for you?

Well, it may clog up the fuel system in your engine and keep you from fishing. As boaters in some regions found out the hard way last summer,

old MTBE fuel and new E10 fuel don't mix. When they do, a talcum-powder-like residue forms in the tank and invades the fuel system, bypassing conventional filters. But that's not all.

Ethanol acts as a solvent and scours fuel tanks of any sludge that may have built up over the years. As this material falls off tank walls, it gets sucked into the fuel system and can clog injectors and filters, causing engines to malfunction. Fuel- and direct-injected engines have smaller injector apertures, so they are very susceptible to E10 problems.

Another challenge presented by

E10 fuel is its relationship with water. E10 can hold up to four teaspoons of water in suspension per gallon. Once this saturation point is exceeded, the solution separates and the gas floats on top while the ethanol and water mix on the bottom, where your fuel-system pickup invariably sits. This is called "phase separation," and when it occurs, the fuel should be drained and replaced.

Concerned? You should be. Ethanol additive will be in 40 percent of gas by the end of this year, increasing to 50 percent by the end of 2007.

E10 EXPLAINED

This whole mess is a result of last summer's federal legislation that phased out methyl tertiary butyl ether (MTBE), an additive that made gas burn cleaner but also contaminated ground water.

The law also required that four billion gallons of ethanol additive be mixed with gas this year. Ethanol plants are springing up across the heartland to distill huge quantities of this 200-proof non-potable alcohol to help gasoline burn cleaner.

According to Ron Lamberty, vice president for the American Coalition for Ethanol (www.ethanol.org), E10 has been on the market for several years in California and the Midwest with few repercussions.

"It's a good, clean-burning fuel," says Lamberty. "Most boaters have gotten through the transition without major problems."

THE GOOD NEWS

While newer models of outboards built by Honda, Mercury, Evinrude, Suzuki, Tohatsu and Yamaha are engineered to run E10 fuel, it's wise to take precautions to ensure proper operation over the long haul.

First, step up filtration in the fuel system. To prevent problems, run the fuel tank as low as possible and, if it is feasible, have it cleaned before

switching over to E10 fuel. (E10 can also break down fiberglass resin—pre-1985—and older plastic tanks, so fuel-tank replacement may be necessary.) Check and replace your boat's fuel filters often. While some fuel-injected engines have 28-micron filters, they may need ten-micron filters to protect the injectors. Yamaha has rolled out a line of ten-micron filters with high flow rates—up to 90 gallons per hour—designed to take on E10 problems (see "Injector Protector," right).

"The 10 Micron filters were designed specifically to correct the problems our owners were experiencing in the Northeast with the changeover in fuels," says David Meeler, a technical marketing expert for Yamaha. "These filters are the best line of defense against E10 effects." The filters last 100 engine hours or so and should be inspected every ten to 20 hours.

To minimize phase separation, add non-alcohol fuel stabilizer to every

tank of gas. Speaking of stability, E10 has a shelf life of 60 to 90 days before it starts to break down, so it's important to use the fuel and turn over the tank. Don't let it sit.

Also, choose your fuel dock carefully. Some fuel distributors are handling the switch better than others. "We haven't had any problems with E10 fuel so far," says Dan Crete, mechanic foreman of Burr Bros. Boats, a service yard in Marion, Massachu-

setts. "Because we've been proactive,

The facility used up its MTBE fuel before switching to E10 and checks the refilled tank weekly for water. "We have a 3,000-gallon aboveground tank," says Crete. "We've only pulled off one teaspoon of water. Condensation hasn't been an issue at all."

If ethanol hasn't reached your fuel dock yet, it's coming. Take the necessary precautions and you'll fish your way to the next fuel challenge. ☺

Injector Protector

THROW ANOTHER BLOCKER INTO YOUR FUEL LINE.

If you haven't already, install an in-line fuel filter and keep the gunk out of the engine. Yamaha developed the **10 Micron filter** (\$15, shown) for outboards larger than 115 horsepower and the Mini-10 for smaller motors. Racor and other after-market manufacturers also make ten-micron filters to catch sludge and impurities that might damage the engine. Carry a spare filter, too. Service shops, such as **Burr Bros. Boats**, sell kits with filter replacements and tools in a sealed bucket, equipping you for a quick change and proper disposal once ashore. Visit www.burrbros.com. —D.L.



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