



BoatUS Ethanol Fact and Tip Sheet

**Is gasoline with 10% ethanol (E-10) coming to your area?
Here are a few timely tips from BoatUS**

FACT: *E-10 is a solvent that will clean gums and resins off fuel tank walls, with the potential to clog fuel filters and shut down the engine.*

TIP: Be ready to change fuel filters more often, particularly as you start using ethanol fuel. Carry spare 10-micron filters as well as a galvanized bucket to safely store the used filters until they can be disposed of properly. The problem typically disappears after 2-3 tanks of fuel.

FACT: *Not all fuel hoses are compatible with ethanol.*

TIP: Make sure hoses are marked J-1527.

FACT: *Ethanol is known to chemically react with fiberglass fuel tanks, which can cause them to deteriorate and potentially fail. When this happens, engines can also be destroyed before the problem is discovered. Fiberglass tanks most likely to react were built before the mid-1980s but there are some reports of much newer tanks being impacted.*

TIP: Unless your boat's manufacturer can confirm that your fiberglass gas tank was built to withstand ethanol, the only remedy is to not use E-10 gas (which may not be possible) or to replace the tank with another material such as aluminum. When ethanol corrodes a fiberglass tank, it creates a sludge that bypasses the filter and wrecks the engine. Ethanol does not directly affect aluminum, stainless steel or polyethylene tanks.

FACT: *Ethanol has the ability to attract greater amounts of water and "phase separate," or form two separate solutions in the gas tank, usually over a long period of time. Once this happens, the engine may not run and internal damage can occur. The problem cannot be corrected; the only solution is to drain the tank and refill with fresh gasoline.*



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TIP: Problems with phase separation are rare and are most likely to occur when the boat is idle for long periods and the tank is partially filled. Leaving a tank partially filled with E-10 invites phase separation, which cannot be remedied by adding fresh gasoline. Once E-10 phase separates, the water will remain at the bottom of the tank. The best practical recommendation when the boat will be idle is to fill the boat's fuel tanks to about 95% full, leaving room for expansion. A tank that is almost full limits the flow of air in and out of the vent, which reduces the chance of condensation adding water to the fuel. Many boat owners top off their boat's gas tanks between outings to reduce condensation.

FACT: *Fuel stabilizer does not prevent phase separation.*

TIP: We recommend stabilizer for any fuel that is going to sit for a long time, but it won't help prevent ethanol phase separation.

SOME DON'TS:

- Don't drain fuel tanks of E-10 gas. While it does eliminate any chance of phase separation, it's potentially dangerous and not recommended.
- Don't try to plug up a fuel tank vent to prevent moist air from entering a tank. Without room to expand, the additional pressure could rupture fuel system components.
- Don't install a water separator thinking it will prevent phase separation. Ethanol readily absorbs water (10 times more water than gasoline with MTBE), which will burn safely through the engine. But if ethanol-enhanced gasoline does become saturated, an engine won't run on the (water-soaked) ethanol solution, which sinks to the bottom of the tank.
- Don't use E-85 in any boat.

For more information on coping with E-10, go to BoatUS.com/Seaworthy