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Coping with ethanol

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Ethanol has an affinity for water and will absorb it until the amount of water in the solution reaches a point where the alcohol drops out of, or "separates," from the fuel and collects in the bottom of the tank - that's phase separation.

There, the mixture of alcohol and water promotes the growth of bacteria, which can lead to damaging sludge. Also, the alcohol/water mix, if allowed to build up sufficiently, can actually be picked up and delivered through the fuel system, also causing serious problems.

Here's some advice for dealing with ethanol fuel formulations in the marine environment.

- **Non-ethanol fuel:** If you boat in locations that still sell non-ethanol fuel, buy it and use it.
- **Fuel-testing kits:** If you are using an ethanol-blend gasoline, buy a test kit to make sure the ethanol level is at or below 10 percent. No marine engine is designed to run on gasoline with more than 10 percent ethanol.
- **Fuel stabilizer and conditioner:** Fuel stabilizers help delay the onset of "phase separation," according to David Meeler, Yamaha product marketing information manager. Use a quality fuel stabilizer and conditioner without alcohol. Put it in the tank every time you fill up and before seasonal layup.
- **Buying fuel:** Buy your fuel from a reputable fuel dock or filling station, preferably one where fuel turnover is fast. Stick with that station, but avoid filling up when the station is receiving fuel from a tanker. The gasoline being pumped into the station's tank can stir up sediment.
- **Filters:** Use a water/fuel separator filter with a 10-micron rating, and change filters every 50 to 100 hours.
- **Carbon cleaner:** A carbon cleaner can be added to the fuel tank each time you add gasoline. It reduces the possibility of rusting, piston-ring sticking and carbon buildup.
- **Storage:** If possible, avoid storing gasoline in a tank for more than 90 days.

More on ethanol problems

• [Everyone Hates Ethanol - Wall Street Journal](#)

• [The Clean Energy Scam - Time magazine](#)

• [The Ethanol Scam - Rolling Stone](#)

There are at least two schools of thought when it comes to how full the tank should be during offseason layup. Some engine manufacturers recommend treating the fuel and storing the tank 7/8 full, leaving some room for expansion. This helps reduce condensation and phase separation. In contrast, some technicians recommend draining as much fuel out of the tank as possible before layup. Since ethanol's shelf life is only 90 days, these technicians would rather deal with a smaller amount of old E10 than a full tank when it's time to launch the boat again.

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