BOATOWNERS WARNED:

E10 Fuel Presents An Unacceptable Risk

According to the outboard industry, the popularity of ethanol blended fuels could be a disaster for the boating industry - especially if used innocently by boatowners unaware of the potential risks involved. As Gary Fooks* reports in this special feature on E10, the solution is simple: don't use it in your outboard; leave it to use in your very late model car - and save the planet that way.

Just one tank of the Ethanol E10 fuel could mean an expensive trip to the workshop. Ethanol fuel is being sold at almost every petrol station on the east coast and will be hard to avoid in NSW and Qld.

Boats more than a few years old, and any boat with a fibreglass or aluminium fuel tank is at risk. There are no real savings from E10 (10% ethanol 90% petrol) at current pump prices, and the potential damage bill could be high.

While ethanol is okay for about 60% of new cars, some boat owners are about to experience melted fibreglass fuel tanks, fuel leaks and damaged engines.

That's why all of the four major oil companies, as well as the NSW and Queensland governments, have issued warnings against using ethanol in any boat and advising not to leave it in lawn mowers for more than a few weeks.

David Heyes, of BRP Evinrude and Chairman of the Australian Marine Engine Council (AMEC) recently stated that his members were alarmed. Heyes explained that while almost all modern outboards will at least tolerate E10, the outboard industry was very concerned with the

potential damage to fuel systems, and especially for the safety of boat owners.

The real cause of damage to marine engines is dissolved fuel system components being deposited inside sensitive modern engines.

The risks for boat owners come from three key characteristics of ethanol.

- It's a powerful solvent,
- It doesn't stay mixed with petrol, and
- It has a very short shelf life.

The solvent nature means that it dissolves some of the components of fibreglass fuel tanks, as well as many elastomer (rubber like) materials found in fuel systems. These pass through the best filters and end up forming destructive deposits inside marine engines. Chemical attacks on tanks and hoses mean the inevitable leaks are a fire risk. That means a fire risk, or at best, a powerful solvent attack to the bilge surfaces.

Ethanol and petrol will "separate" under normal, moist boating conditions, and that action concentrates the ethanol, so it can do even more damage.

Ethanol has higher volatility than most elements of petrol, meaning it evaporates off first.

That means it may go 'sour' in as little as 2 weeks.

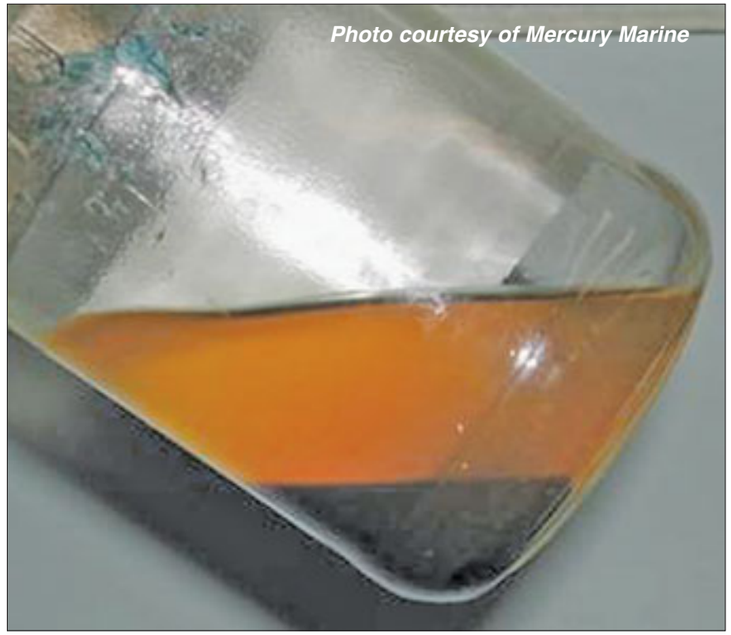
As state governments in the biggest boating states continue to push ethanol blended fuels at the bowsers, much of the boat building industry has missed the warning signs.

E10 - A Money Saver?

The attraction to most motorists is the apparent lower price of E10 blended fuel, but this is a very dubious proposition, to say the least.

There are no dollars to be saved by using E10 at today's prices.

Ethanol has a heating value of 23.5 MJ/L, which is 32% percent less than petrol according to my



This is what all the fuss is about - an example of "phase separation" in petrol - that 'sludge' on the bottom is not good news for engines.

calculations. Even conservative studies say that a 10% mix (E10) will lose about 3% in fuel economy.

So if unleaded fuel is $1.30 per litre, E10 has to be under $1.26 just for the buyer to break even.

Currently the price difference is closer to 3 cents, so E10 is hardly a bargain.

If you want to do the right thing, and support a renewable bio-fuel then I take my hat off to you. Just realize that you will be paying more, and keep it for your car and not the boat.

Ethanol - The Super Solvent

As Paul Dawson, technical guru at Evinrude puts it, ethanol is going to liberate dirt and residue in your fuel system that you never knew existed.

In 2007, Shell had to shut down its ethanol sales for a period because the new fuel in old tanks just kept releasing sediments and blocking up filters.

Boaties will experience the same blocked filter problems. So if you end up using ethanol (by accident, or through lack of choice) plan for a filter change after the first tank, and carry a spare or two.

Even the best filters won't block some potential hazards. Some chemicals become completely dissolved and readily pass though the very best filters before ending up re-deposited inside the engine. And that's how engines become uneconomical to repair.

Boats with fibreglass tanks are most at risk from the solvent properties of ethanol. Fibreglass tanks are soon attacked by ethanol, dissolving the resins, eventually weakening the structure and inviting leaks.

That also means any fuel spills around the filler cap (who amongst us has never had some form of blow-back when filling the tank?) could cause some permanent damage to gel coat or paint finishes.

An ethanol spill is one you need to wash off immediately. And I mean,

Who Wants Ethanol?

There is such a tide of groups who want ethanol that we will inevitably be obliged to use more.

Environmentalist want it because it is "green" fuel made from renewable crops. E10 also lowers engine emissions, but there is a cost.

But the biggest push comes from sugar cane and grain growers who get new customers for their farm produce. Then there are the ethanol manufacturers like Manildra, who suddenly find themselves in the lucrative oil industry.

However, grain used to make fuel pushes up the demand for crops and in turn cattle feed and food prices. So feed-lotters are opposed. It also means less excess food available for donations to famished nations and to support natural disasters.