

NATIONAL BOATING FEDERATION POSITION STATEMENT REGARDING THE USAGE OF ETHANOL IN MARINE GASOLINE

Background

There is a federal mandate for producers to use a certain amount of ethanol and no apparent economical way to keep it out of marinas. Due to the corrosive nature of ethanol and its affinity for water, ethanol is added at the tank truck just before delivery and the same truck that goes to the corner gas station also goes to the marina.

Negative Issues Associated With The Use Of Ethanol In Marine Gasoline

There are several issues –

First is a safety issue for those boats equipped with fiberglass gas tanks, generally those made before the mid-80's. Ethanol tends to dissolve certain resins, which then find their way through the engine intake and coat intake valves, which makes them stick causing bent pushrods or worse. More important is the possibility of a gas tank degrading to the point of leaking. As anyone knows, gas in the bilge is an explosion waiting to happen. In addition to boats such as Hatterases, Betrams, and Chris Crafts made before the mid-80's, some smaller boats, notably Boston Whaler Montauks, have small above-deck fiberglass gas tanks. Some of these tanks have been reported leaking as well. Any boat with fiberglass gas tank that was not specifically designed for ethanol should be suspect. There are some resins that are immune to ethanol (some vinyl esters, for example) and are used in underground gasoline storage tanks, but most resins, including common epoxies are not able to withstand contact with ethanol. Thought it's no comfort to those with fiberglass gas tanks, fortunately, only a very small percentage of boats have them.

Second is the addition of alcohol to gasoline adversely affects the volatility of the fuel, which could cause vapor lock.

Third is ethanol can also affect many plastics and rubber. Alcohol present in automobile gasoline is not compatible with the rubber seals and materials used in boats, however, most fuel hoses made after 1984 and marked with SAE J1527 are designed to withstand ethanol. Some older fuel filter bowls made of plastic may be affected and some seals, o-rings, or plastic parts could be damaged.

Fourth is phase separation, which happens when the fuel is cooled as a result of the vessel operating in winter weather. When the alcohol separates from the gasoline, it may carry water that has been held in solution and that cannot be handled by the sediment bowl. This may affect performance and drivability. Ethanol absorbs water readily and as little as .5% water will cause a phase separation. A water/ethanol mixture, being heavier

than gas, will sink to the bottom of the gas tank, leaving a lower octane gas on top. This low octane gas can cause performance issues with 4-stroke engines, but can cause damage with 2-strokes due to a lean condition. In addition, 2-stroke engines can be damaged if a quantity of water/ethanol is ingested since the proper lubricating oil won't be present. Keeping water out of the tank is obviously important.

Fifth and another problem with the introduction of ethanol comes from mixing gas with MTBE and gas with ethanol, especially in the presence of water. This chemical soup is believed by some manufacturers to create a gel-like substance that clogs passages in carburetors, most notably in outboards. Stalled engines and shop bills are the result. Fuel injected engines seem to suffer much less than carbureted ones.

When ethanol is first introduced, the boater may experience more frequent fuel filter replacement as ethanol's superior solvent properties cleans old varnish and other stuff from the tank. Gas with ethanol also typically delivers slightly less fuel economy.

WHEREFORE, the *National Boating Federation* takes the position that any amount of ethanol whatsoever does not belong in marine gasoline, and the *National Boating Federation* is strongly opposed to the use of ethanol in marine gasoline and calls for the outlaw of any addition of ethanol in marine gasoline.