

NUMBER: 80-2

DATE: 11/1/79

---

**CIRCULATE TO:**  
SERVICE MANAGER  
PARTS MANAGER  
MECHANICS

## **GASOHOL in OUTBOARD MOTORS**

While gasohol (10% ethyl alcohol in lead-free gasoline) and other alcohol/gasoline blends used abroad are giving good service in cars, special precautions must be taken for use in outboard-powered boats.

While Mercury Marine does not recommend gasohol for Mercury Outboards, it can be used. Tests to date reveal that it has no major effect on the rubber and neoprene fuel system parts.

Alcohol-containing fuels have a tendency to absorb moisture slowly from the air. At first this moisture will remain in solution, but once the water content of the fuel has built up to somewhere around 1%, it will separate out, bringing the alcohol with it. This alcohol-water mixture settles at the bottom of the fuel tank, and outboard engines will not run on it. Before the engine can be restarted, it is necessary to remove the separated layer, flush out the fuel system with clean fuel and, usually, remove and dry the spark plugs.

Of special concern to outboards is that a slug of water-alcohol mix may be picked up and enter one of the carburetors of a multi-cylinder engine. This mixture will contain no oil and will wash oil off the bore of any cylinder that it enters. If the other carburetors are still filled with a good fuel, their cylinders will keep the engine turning, and the cylinders, that have the alcohol-water mix, usually will suffer internal damage.

In cars, alcohol blend fuels normally are burnt before they can absorb enough moisture to cause trouble, but boats often sit idle long enough for separation to take place.

To operate an outboard motor on gasohol, storage of gasohol in the fuel tank for periods of more than a few days must be avoided in a high humidity climate.

In such conditions, either drain the fuel tank and idle the engine until the carburetors run dry, or run the tank nearly empty and refill with fresh fuel prior to the next use. If changing to straight gasoline, the motor then should be run long enough to purge the gasohol from the carburetors before shutting down.

The use of gasohol in MerCruiser four-cycle engines, that can run on lead-free fuel, is satisfactory, as it is in most automobiles, except for the risk of separation when fuel is stored in the tanks. Those MerCruiser engines, that were built in 1974 and prior years, however, required leaded gasoline. When gasohol is used in these (prior to 1975) engines, a minimum of one tank-full of leaded gasoline must be used after each four tank-fulls of gasohol.