



AUTOGAS QUESTIONS & ANSWERS

We are reprinting two recent queries made to AVIATION CONSUMER along with their answer.

"I am currently using unleaded autogas to fuel my 1959 Cessna 150 and have done so for the past year or so. At one point, I was using an autogas that contained alcohol and found that the rubber gaskets on the fuel caps swelled, making them difficult to close. I switched to Exxon (no alcohol) and the problem subsided.

During my recent annual, we replaced the fuel cap gaskets and the O-rings in the fuel drains, as they had deteriorated.

I have read that many gasoline refiners are replacing lead with an additive called MTBE (methyl tertbutyl ether) as an octane enhancer. Apparently Exxon is using this route instead of alcohol.

My question is, will MTBE have significant effects on rubber components and other materials found in aircraft fuel systems?

Thomas R. Coburn, Cockeysville, Md

"The increased use of MTBE to replace lead shouldn't affect you, since you are using unleaded auto gas. (The EAA autogas STC, in fact, permits only unleaded auto fuel.) The Peterson autogas STC on the other hand, does permit use of regular (leaded) fuel.

The sudden shift away from lead to MTBE was triggered by new EPA rules which severely limit use of lead in auto fuel, starting last January. Regular "leaded" fuel (typically 89 octane) may contain only 0.1 ml of tetra-ethyl-lead per gallon. Unleaded fuel (typically 87 octane) is unaffected by the EPA dictum.

MTBE has been used in auto fuel for several years to "fine-tune" octane. According to Rick Riley of Phillips Petroleum, MTBE has none of the water separation or solubility problems of alcohol and toluene. "It's a gasoline-like-product," says Riley. "There's no evidence that it acts any differently than pure gasoline." Because MTBE is a better octane-booster than alcohol, it is present in much smaller quantities than alcohol or toluene. Typically, autogas contains no more than 2-3 percent MTBE, according to Riley. This, plus the fact that MTBE stays dissolved means that it shouldn't affect any fuel system materials.

"How can I tell if the auto fuel I buy has alcohol in it? I live in Texas and it is not required to be labeled.

How are people filtering the gasoline to get all the trash out of it?

How do you tell if the gasoline is summer blend (lower vapor pressure) or winter blend (higher vapor pressure)? I have had vapor lock two or three times in my Cherokee 140 using auto gas. Both times it happened on the ground, on a hot summer day, after I had shut down. Upon trying to restart after a couple of hours, the engine wouldn't start due to vapor lock.

Larry Chapaan, Abilene, Texas

"You won't find out about alcohol by asking the gas station attendant; the stations usually don't know what's in their gas. The best way is to test it yourself.

Buy a graduated flask (just like you used in high school chemistry), pour in 10 ml of water, and then fill with the gasoline to be tested. Vigorously shake the flask for at least 3 minutes, preferably five. Then check the water level. If it's more than 10ml, the apparent extra water is actually alcohol that has separated out from the gas and blended with the water.

Filtering generally isn't a problem with autogas, but if you want to make sure (and eliminate water as well), we'd suggest the Drew-Shell 8PG Funnel Filter. It's available for about \$30 from Drew-Shell Development Corp., Raemont Road, Granite Springs, N.Y. 10527 (914-248-7423).

As far as vapor lock goes, beyond the obvious ("If it's summer, the gas must be summer blend"), you can determine the vapor pressure of your fuel with a gadget called the Hodges Volatility Tester. It's available from Peterson Aviation, Rt 1 Box 18, Minden, Neb 68959, (308-832-2200).

For further information on these products and techniques, and other tips for using autogas in aircraft, see the August 1, 1985 issue of THE AVIATION CONSUMER.



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