

2- Corrosiveness of Ethanol

Q: Is alcohol corrosive to engines?

I told a friend about your website. He said ethanol was good for the most part, but contained so much water it was highly corrosive to engine parts and so your engine will wear out prematurely.

Had any problems with this with your cars? Mark Allen

A: Dear Mark, I have seen a couple of university studies some years ago where engines which had logged over 250,000 hours on straight 160 to 180 proof ethanol were dis-assembled, and just as clean as brand new. No carbon build-up, and strangely, no rust. Now, most of these engines were run more or less continuously on engine blocks inside their engine labs, they didn't have time to build up rust from sitting around a lot. Even petrol engines will build up rust if they sit around for too long, though. Water is a good lubricant, and isn't at all corrosive if something is completely submerged, with no oxygen available. But all water is not equal. Some water is more corrosive than other types of water, mainly depending on the pH, but this can also be adjusted. The thing is, the water in distilled alcohol is also distilled, so has a neutral pH. Alcohol is listed as corrosive, but ethanol is not nearly as corrosive as methanol. It will, however, attack the inner coating of your gasoline tank. Ideally, a car made for using 180 proof would have a polypropylene tank, but you can just use your normal tank and change your fuel filter a bit more often, as it will eventually clog with rust & other little particles. I seriously doubt that it would eat through the tank, and have never heard of this.

I ran my cars sometimes on ethanol and sometimes on gas, depending on whether or not I was able to make enough fuel that week. One time I pulled the heads on my VW bug, to replace a burned valve and was amazed at how clean it was. (Those old VW engines were terrible for going out of adjustment). Alcohol is also a bit of a solvent when it comes to various types of plastics that may be found in a carburetor or fuel injector. But don't let this scare you off, either. On the other hand, your first engine conversion ought to be an old junker, so you don't void the warranty on your \$25,000 SUV. But the thing is, you could add an anti-corrosive agent, as do the big petroleum companies. Think about all the water and anti-freeze in any water-cooled engine. Anti-freeze is made of water and alcohol, both of which are corrosive, so they add an anti-corrosive agent.

The main thing is, the petroleum industry has a lot of reasons why we shouldn't even think about using a different fuel, and actually put out a lot of mis-information. Check out this website for more technical info on fuels.

http://www.ethanolrfa.org/auto_mechanics.shtml