

How to Find the Percent of Alcohol in Gasoline.

Be sure to work in a well-ventilated area away from any sparks, flames, lit cigarettes, etc.

1. Use an 8oz. baby bottle.
2. Put in 1 1/2 ounces of water.
3. Put in gasoline from the suspect vehicle up to the 8oz. mark.
4. Cap the bottle and shake vigorously.
5. Set the bottle upright and wait a few minutes for separation.

Results:

If there is alcohol in the gas, the gas/water separation line will be above the original 1 1/2 ounces of water line. How much alcohol by *percent* can be determined by the chart below.

Line at Ounces Where Water & Gas Separate	Equals the Percent of Alcohol in the Gasoline
1 1/2 Ounces	Zero Alcohol
1 3/4 Ounces	3%
2 Ounces	6%
2 1/4 Ounces	9%
2 1/2 Ounces	12 1/2%
2 3/4 Ounces	15 1/2%
3 Ounces	18 1/2%
3 1/4 Ounces	21 1/2%
3 1/2 Ounces	25%
3 3/4 Ounces	28%
4 Ounces	31%

This test is based on these facts: Alcohol blends with gasoline. Alcohol blends *better* with *water*. Water and gasoline don't mix. When water, alcohol, and gasoline are *all* mixed together, the alcohol will combine with the water and the *alcohol/water* solution will separate from the gasoline.

Two types of alcohol are blended with gasoline: ethanol (grain alcohol), and methanol (wood alcohol). 10% ethanol and 5% methanol in lab tests have proven acceptable *provided* the methanol has correct co-solvents and a corrosion inhibitor. Plastics *grow* or *swell* at controlled rates if the alcohol is kept to these safe limits.

Methanol tends to deteriorate rubber, plastic and metallic fuel system components. The deteriorate rate is a function of time rather than distance traveled, so a 50,000mile test completed in one year will not indicate what would happen during 50,000miles over four or five years.

Components affected include fuel tank linings, in-tank fuel pumps, fuel injection systems, and rubber commonly used in vehicle fuel systems. Methanol significantly increases vapor pressure. When high enough, the vapor pressure can unseat the canister purge diaphragm and rupture it. There is more of a tendency to "vapor lock" when methanol is used in gasoline.

It takes two times as much alcohol as gasoline (HC) to get a 14.7/1 air fuel ratio. For systems designed to run on HC, excessive alcohol can have an effect on fuel injector pulse width. Most gasoline today has some alcohol.

This test will find out how much. Maybe the drive ability problem you are troubleshooting is due to too much alcohol in the gasoline.