Wheels: *Bob P writes by e-mail: "Is there any gasoline out there that does not contain ethanol? I'd prefer to not use it. How about Shell? I hope so. Thanks. Keep up the good work."*

Halderman: Shell is a top tier gasoline and while they may have up to 10% ethanol, most of their gas does not have that much. Speedway has also tested for low amounts of ethanol in the testing I have done. Regular grade gas usually has a better chance of not containing ethanol compared to plus and premium. By adding ethanol, they can increase the octane rating but this also lowers the BTU rating of the fuel at the same time often resulting in reduced fuel economy. The BTU, which stands for "British Thermal Units" means how much heat energy is present in each gallon. The higher the BTU content in gasoline, the vehicle will achieve higher the fuel economy. Adding 10% ethanol (also called ethyl alcohol) decreases the BTUs in a gallon of gasoline about 3%.

Wheels: How can Bob know which fuels contain alcohol?

Halderman: The amount of ethanol added to gasoline is due to many factors which are beyond what I know such as:

- One is a tax advantage for the oil companies that add ethanol, so there is a financial factor involved.
- The relative cost of gasoline compared to the cost of ethanol. When gasoline is relatively cheap, it would not make sense for a fuel distributor to add ethanol unless it costs less than gasoline.
- The method of blending. There are three types of blending:

1. **In-line blending**; Gasoline and ethanol are mixed in a storage tank or in the tank of a transport truck while it is being filled. Because the quantities of each can be accurately measured, this method is most likely to produce a well-blended mixture.
2. **Sequential blending.** This method is usually performed at the wholesale terminal and involves adding a measured amount of ethanol to a tank truck followed by a measured amount of gasoline.
3. **Splash blending.** This method can be done at the retail outlet or distributor and involves separate purchases of ethanol and gasoline. In a typical case, a distributor can purchase gasoline, and then drive to another supplier and purchase ethanol. The ethanol is then added (splashed) into the tank of gasoline. This method is the least accurate method of blending and can result in ethanol concentration for E10 that should be 10% to range from 5% to over 20% in some cases.