E15 in the Transportation Fuel Marketplace: Use of E15 in your Automobile

What is E15?

As E15 (85 volume percent gasoline, 15 volume percent ethanol) is poised to enter the marketplace, it is important that consumers are aware of which vehicles are permitted to use E15 and of the extensive testing that led to the U.S. Environmental Protection Agency (EPA) approval for its use in 2001 and newer autos and light-duty vehicles as well as all flex-fuel vehicles (FFVs).

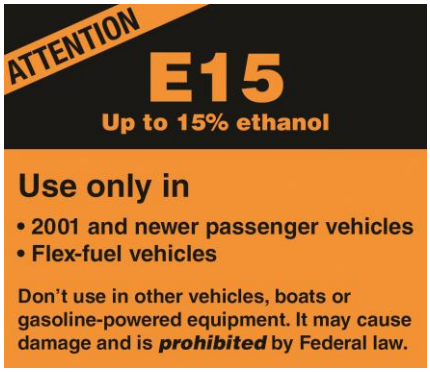
Consumers are, of course, aware of the suitability of E10 for autos and other gasoline powered engines. In fact 97% of all gasoline now sold in the U.S. is E10. However, through a two-part waiver decision, EPA has raised the permitted level of ethanol to 15 volume percent (15v%) for Model Year Vehicles 2001 and newer.

E15, a Highly Tested Fuel

Over the past several years, numerous tests on the use of higher level ethanol blends such as E15 and E20 have been conducted on a wide variety of vehicles and equipment. These tests were conducted by various stakeholders and interested parties with a great deal of testing being coordinated by the U.S. Department of Energy (DOE) and its affiliated National Laboratories.

Tests have included vehicle drivability[1], catalyst durability[2], fuel pumps and sealing units[3], outboard diagnostic systems[4], automotive fuel system components[5,6,7], and numerous studies by the Coordinating Research Council, which has included E15 and/or E20 in many of its research projects.

Which Vehicles and Engines May or May Not Use E15?



Based on an extensive and detailed review of all available studies, the EPA approved the use of E15 in 2001 and newer model year cars and light-duty vehicles and all model years of FFVs.

EPA chose not to extend the permitted use of E15 to 2000 model year and older vehicles. This was in large part due to the fact that controlled tests cannot be performed on such old vehicles due to various mileage levels, types of use, state of repair, and other variables that would render test results inconclusive.

EPA also excluded non-automotive engines from the permitted use of E15. Many non-automotive engines do not have the sophisticated computer controls to adjust for fuel variations. This category also covers a much broader range of applications, duty cycles, engine types, engine sizes, and cooling technology. This makes it very difficult to test for all scenarios that could be experienced in field use.

But for the vehicles that EPA has approved for E15 use, drivers can rest assured that EPA has thoroughly assessed such use and has found no reason for concern. In fact, E15 has undergone more testing than any automotive fuel previously introduced into commerce.

Automobile Owner Manual Guidance

While the EPA offers clear guidance on the use of E15, some auto manufacturers may not. Since E15 was only recently approved for use, vehicle owner manuals for the 2001 through 2012 model years may not offer guidance on the use of E15 since it was not an approved fuel when those vehicles were manufactured. Owners of 2001 through 2012 model year vehicles should check with the auto manufacturers or an authorized dealership for guidance on using E15. Later model year owner manuals will contain such guidance.

EPA stated that manufacturers may not deny a warranty based on the use of a different fuel if that fuel did not cause the problem for which the warranty claim is made. This is an identical situation to lack of inclusion in owner's manuals and the availability of suboctane gasolines that are a minimum 86 AKI_8.

Fuel Economy

There are many variables that can impact fuel energy content as well as vehicle fuel economy as measured by miles per gallon (mpg) of fuel used. Studies have shown that with all other things being equal, ethanol impact to fuel economy would be commensurate to the loss of energy density. This translates into a loss of less than 2% for E15 when compared to other gasoline blends in the marketplace[9, 10]. For a vehicle getting 30 mpg this would equate to a drop to around 29.4 mpg or about the loss of miles to the gallon when vehicle tires are improperly inflated.

For more information on E15 and the ethanol industry, please visit www.EthanolRFA.org.

References

1. Demonstration and Drivability Project to Determine the Feasibility of Using E20 as a Motor Fuel, University of Minnesota, Department of Engineering, October 2007
2. Intermediate Ethanol Blends Catalyst Durability Program, Oak Ridge National Laboratory, February 2012
3. An examination of fuel pumps and Sending Units During a 4000 Hour Endurance Test in E20, Minnesota Center for Automotive Research at Minnesota State University, Mankato, March 2008
4. Impact of E15/E20 Blends on OBDII Systems – Pilot Study CRC Report No. E-90 Coordinating Research Council, March 2010
5. The Effect of E20 on Automotive Fuel System Components – Metals Study, Minnesota Center for Automotive Research at Minnesota State University, Mankato, February 2008
6. The Effect of E20 on Automotive Fuel System Components – Elastomers Study, Minnesota Center for Automotive Research at Minnesota State University, Mankato, February 2008
7. The Effect of E20 on Automotive Fuel System Components – Plastics Study, Minnesota Center for Automotive Research at Minnesota State University, Mankato, February 2008
8. EPA-420-R-11-006 June 2011, Page 98.
9. Intermediate Ethanol Blends Catalyst Durability Program, Oak Ridge National Laboratory, February 2012
10. Effects of Intermediate Ethanol Blends on Legacy Vehicle and Small Non-Road Engines, Report 1- Updated, National Renewable Energy Laboratory, February 2009