

E85 ETHANOL FACT SHEET

What is ethanol?

Ethanol (ethyl alcohol) is a high-octane, renewable fuel made from plant sugars. In the U.S., ethanol is typically produced from corn and other grain products. In the future, ethanol may be produced from biomass resources, including energy crops, such as switchgrass, or forestry and agricultural wastes.

What ethanol blends are typically used?

- **E10:** Gasoline-ethanol blends containing up to 10% ethanol may be used in any gasoline-powered vehicle. The ethanol boosts octane and contributes to more complete fuel combustion. Blends above 10% ethanol are not currently approved by auto manufacturers or the U.S. Environmental Protection Agency for use in standard gasoline engine vehicles.
- **E85:** E85 is the term for gasoline blends containing up to 85% ethanol. Ethanol burns cleaner than gasoline and is a completely renewable, environmentally friendly fuel that enhances the nation's economy and increases energy independence. E85 must be used only in flexible fuel vehicles capable of using higher ethanol blends.

What is a flexible fuel vehicle (FFV)?

Flexible fuel vehicles (FFV) are designed by the manufacturer to use any combination of gasoline or ethanol, from 100% unleaded gasoline to 85% ethanol. To date, there are about nine million E85-compatible vehicles on U.S. highways and approximately 142,000 FFVs in Tennessee.

How can I tell if my car is an FFV?

Check your owner's manual, visit your dealer, check inside the fuel cap door, or visit www.e85fuel.com to determine if your vehicle can be fueled with E85.

How is an FFV different from a gasoline-only vehicle?

An FFV contains a fuel sensor that detects the ethanol/gasoline ratio. In addition, parts in the fuel delivery system are ethanol compatible. Because alcohols are corrosive, any part that comes in contact with E85 (e.g., the fuel tank, fuel lines, fuel injectors) must be designed to tolerate alcohol.

What is the fuel economy of E85 vs. gasoline?

While ethanol contains less energy than gasoline, E85 has a much higher octane rating (ranging from 96 to 105). FFVs are not optimized to E85, so they get from 10% to 30% fewer miles per gallon when fueled with E85. However, many variables affect fuel economy. For example, aggressive driving can result in a 20% loss of fuel economy, and low tire pressure can reduce mileage by 6%.

Can I use E85 in my gasoline-powered vehicle even if it is not an FFV?

No. The use of E85 in gasoline-only vehicles is not recommended because the incompatibility of the alcohol fuel (ethanol) with some parts in gasoline-only engines may cause damage. Performance and emissions will also be compromised.

Sources:

Renewable Fuels Association, www.ethanolrfa.org/

National Ethanol Vehicle Coalition/Growth Energy, www.E85fuel.com

Alternative Fuels and Advanced Vehicles Data Center, www.afdc.energy.gov/afdc/ethanol/

B20 Biodiesel

What is biodiesel?

Biodiesel is a clean-burning alternative diesel fuel produced from vegetable oils or animal fats. Blends of up to 20% biodiesel and 80% petroleum diesel can be used in most diesel engines with few if any modifications. Biodiesel is simple to use, biodegradable and nontoxic.

- B20 is the term for biodiesel blends containing 20% biodiesel and 80% petroleum diesel.
- Blends labeled as B6 – B20 may contain between 6% and 20% biodiesel.

Is biodiesel the same as raw vegetable oil?

No. Fuel-grade biodiesel must meet strict industry specifications to ensure proper vehicle performance in order to be registered with the U.S. Environmental Protection Agency (EPA) as a legal motor fuel for sale and distribution. Unprocessed vegetable oil and recycled greases have not been transformed into biodiesel and are not legal motor fuels.

Can I use biodiesel in my existing diesel engine?

Biodiesel can be used in most diesel engines with no modifications to the engine or the fuel system. Biodiesel has a solvent effect that may release deposits that build up on tank walls and in fuel lines from previous diesel fuel usage. When you begin using biodiesel, these deposits are cleaned out and may accumulate in fuel filters. After the first tank or two of biodiesel, check and—if needed—change your fuel filter to prevent clogging. This is particularly important for older vehicles.

What are the benefits of using B20?

Biodiesel exhaust is less harmful to human health than diesel exhaust, including decreased levels of cancer-causing compounds. Biodiesel also results in significantly lower emissions of visible smoke and noxious odors than petroleum diesel.

Can biodiesel help reduce greenhouse gas emissions?

Yes. U.S. biodiesel reduces lifecycle carbon emissions by 60 to 80 percent, depending on the source, making it the best carbon reduction tool of any liquid fuel commercially available. It also has the highest energy balance of any fuel, returning 4.5 units of energy for every unit of fossil energy needed to produce it.

Will using biodiesel affect my engine warranty?

Vehicle warranties do not cover engine problems caused by any fuel, whether it is biodiesel or petroleum diesel. Warranties cover defects in material and workmanship only. Use of biodiesel alone should not void the engine warranty, but be sure to check your warranty to ensure that biodiesel meets the required fuel parameters established by the engine manufacturer.

Source: National Biodiesel Board, www.biodiesel.org/

How does biodiesel perform?

Biodiesel performs much like traditional diesel. Because it has excellent lubrication abilities, biodiesel reduces wear and tear on the engine.

Sources:

National Biodiesel Board, www.biodiesel.org

U.S. Environmental Protection Agency, www.epa.gov/otaq/renewablefuels/420f09064.htm

U.S. DOE Alternative Fuels and Advanced Vehicles Data Center, www.afdc.energy.gov/afdc/fuels/biodiesel.html