

Ethanol

Ethanol is a renewable, domestically produced alcohol fuel made from plant material, such as corn, sugar cane, or grasses. Using ethanol can reduce oil dependence and greenhouse gas emissions. Ethanol fuel use in the U.S. has increased dramatically from about 1.7 billion gallons in 2001 to about 12.9 billion in 2012.¹

E10 and E15



E10 and E15 are blends of ethanol and gasoline—the number after the "E" indicates the percentage of ethanol.

Most of the gasoline sold in the U.S. contains up to 10% ethanol—the amount varies by region—and all auto manufacturers approve blends up to E10 in their gasoline vehicles.

As of 2011, EPA began allowing the use of E15 in model year 2001 and newer gasoline vehicles.² Pumps dispensing E15 must be labeled (see example). The vehicle owner's manual may indicate the manufacturer's maximum recommended ethanol content.

Vehicles will typically go 3% to 4% fewer miles per gallon on E10 and 4% to 5% fewer on E15 than on 100% gasoline.³

E85 (Flex Fuel)

E85, also called *flex fuel*, is an ethanol-gasoline blend containing 51% to 83% ethanol, depending on geography and season—summer blends tend to have more ethanol while winter blends have less.⁴ E85 can be used in FFVs, which are specially designed to run on gasoline, E85, or any mixture of the two. FFVs are offered by several vehicle manufacturers, and we provide a brief guide to help you determine if your vehicle can run on flex fuel.

MPG. Due to ethanol's lower energy content, FFVs operating on E85 get roughly 15% to 25% fewer miles per gallon than when operating on regular gasoline, which typically contains about 10%

ethanol.⁵

Cost. The cost of E85 relative to gasoline or E10 can vary due to location and fluctuations in energy markets. Though typically cheaper per-gallon than gasoline, it is often slightly more expensive on a cost-per-mile basis.

Performance. Drivers should notice no degradation in performance when fueling with E85. In fact, some FFVs perform better—generate more torque and horsepower—running on E85 than on gasoline or E10.^{6,7}

Availability. More than 2,300 filling stations in the U.S. sell E85. Visit the Alternative Fueling Station Locator for service station locations.

Advantages & Disadvantages of E85

Advantages	Disadvantages
Domestically produced, reducing use of imported petroleum	Can only be used in flex-fuel vehicles
Lower emissions of some air pollutants	Lower energy content, resulting in fewer miles per gallon
More resistant to engine knock	Limited availability
Added vehicle cost is negligible	

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