



Fact Sheet

South Carolina Department of Health and Environmental Control • www.scdhec.gov

Ethanol

What is ethanol, and how is it produced?

Ethanol is an additive used in gasoline to make a cleaner-burning, higher octane fuel. Because it's made from plants, it's a renewable fuel resource. In 2008, about 20.8 percent of the nation's corn crop was used to make ethanol.

Ethanol can also be made from grain sorghum, wheat straw, rice, switch grass, vegetable and forestry waste and other organic matter.

Why are more people starting to use ethanol fuel?

The ethanol fuel at gas stations is known as E-85 and is made of 85 percent ethanol and 15 percent unleaded gasoline. More than 5 million "flex-fuel" vehicles in the U.S. can burn E-85 without harming their engines. Check your owner's manual to see if your vehicle can safely use E-85. If not, your vehicle is still approved to use E-10, which is made of 10 percent ethanol and 90 percent unleaded gasoline. Every automaker in the world guarantees this in their engine warranties.

What are the benefits of using ethanol fuel?

Ethanol adds oxygen to gasoline. This allows gasoline to combust more completely and reduces toxic emissions. Ethanol also lessens our need for imported oil by increasing America's fuel supply.

Even when used as a blend in gasoline, ethanol reduces vehicle emissions. By using E-10 instead of 100 percent gasoline, you reduce:

- Carbon monoxide by as much as 30 percent
- Volatile organic compounds by as much as 12 percent
- Toxic emissions by 30 percent, and
- Particulate matter emissions by more than 25 percent.

What else should I know about ethanol?

- Our country imports about 60 percent of its oil. By 2025, U.S. oil imports are expected to total more than 75 percent of supply. But by increasing our use of ethanol, we can reduce our need for foreign oil. Ethanol is a renewable fuel that our farmers can grow and our companies can produce.
- One acre of corn can make enough ethanol to run a car 72,000 miles on E-10.
- In 2010, U.S. ethanol production lowered demand for foreign crude oil by as much as 445,000 barrels.
- In 2010, 4.65 billion bushels of corn were used to make ethanol.
- Ethanol is the highest-performing fuel on the market, with an octane rating of 113.
- E-85 puts out a lower volume of greenhouse gas emissions than regular gasoline. Using E-85 also reduces emissions of carbon monoxide and many toxics, including benzene, which is known to cause cancer in humans. But E-85 also increases emissions of acetaldehyde, a toxic pollutant. The U.S. Environmental Protection Agency is analyzing E-85 emissions to better understand the impact.

How will the Renewable Fuel Standard (RFS) affect the nation's fuel supply?

Originally passed as part of the Energy Security Act of 2005, the RFS for gasoline was expanded under The Energy Independence and Security Act of 2007.

The 2007 RFS sets a target of 9 billion gallons of renewable fuel in 2008. This amount increases to 36 billion gallons by 2022.

This expanded supply of renewable fuels should significantly lower consumption of crude oil in general and imported crude oil in particular.