



Ethanol Fact Sheet


What is ethanol?

Ethanol is a naturally oxygenated fuel produced by fermenting organic materials such as corn, grains, crop and forestry waste materials. Ethanol is usually blended with gasoline at different levels. E10 is a premium high-octane gasoline for cars and E85 (85% ethanol / 15% gasoline) is used as an alternative fuel for light-duty vehicles.

What types of vehicles can use ethanol?

E10 can be used in any gasoline vehicle without modification. E85, however, offers a higher octane rating and must be used in specified vehicles. All major domestic automakers offer E85 compatible vehicles, or flex-fuel vehicles (FFVs), at the same price as gasoline only models. Refer to list of available FFVs at www.e85fuel.com. According to the Auto Alliance (www.discoveralternatives.org) there are over 102,000 FFVs in North Carolina today. Applications for E85 include non-diesel fleet vehicles, buses, light-duty vehicles and delivery trucks.

2007 Model Year Flex-fueled Vehicles (confirm VIN # to ensure E85 capability)

Buick Terraza, 3.9L	Chevy Uplander, 5.3L	Ford F-150, 5.4L	Mercury Grand Marquis, 4.6L
Chevy Avalanche, 5.3L Vortec	Chrysler Aspen, 4.7L	GMC Savana, 5.3L	Nissan Armada, 5.6L V-8
Chevy Express Vans, 5.3L	Chrysler Sebring Sedan, 2.7L	GMC Sierra, 5.3L V-8	Nissan Titan, 5.6L V-8
Chevy Impala, 3.5L	Dodge Caravan, 3.3L	GMC Yukon, 5.3L Vortec	Pontiac Montana, 3.9L
Chevy Monte Carlo, 3.5L	Dodge Dakota, 4.7L	Jeep Commander, 4.7L	Saturn Relay, 3.9L
Chevy Silverado, 5.3L V-8	Dodge Durango, 4.7L	Jeep Grand Cherokee, 4.7L	
Chevy Suburban, 5.3L Vortec	Dodge Ram 1500, 4.7L	Lincoln Town Car, 4.6L	
Chevy Tahoe, 5.3L Vortec	Ford Crown Victoria, 4.6L	Mercedes C230 Sedan, 3.2L	

How does ethanol perform?

Vehicles operating on E10 achieve the performance and range expected from a premium fuel. Vehicles running on E85 will have a shorter range than gasoline vehicles because a gallon of ethanol has as much as 29% less energy content than a gallon of gasoline. However, ethanol has a higher octane rating than regular unleaded gasoline making E85 a premium fuel. Another benefit of FFVs, which can run on either E85 or gasoline, is that they allow vehicle operators the ability to obtain fuel in areas where E85 is not available. Because of the differences between ethanol and gasoline, FFVs have special fuel lines, hoses, gas tanks, valves and gaskets. E85 content may be lowered to 70% in severe cold weather conditions to avoid cold start problems. E10 and E85 burn more completely and at a cooler temperature than gasoline, resulting in fewer combustion deposits and longer spark plug life.

What are the benefits of using ethanol?

Vehicles running on ethanol fuels emit less carbon monoxide and other toxic chemicals, such as benzene, than those running on gasoline. They also emit the same or lower levels of hydrocarbon and non-methane hydrocarbons. E85 has fewer highly volatile chemicals than gasoline, resulting in fewer evaporative emissions. E10 however, may result in greater evaporative emissions. Ethanol blended fuels derived from grain will result in lower life-cycle carbon dioxide emissions because it is derived from plant material which absorb carbon dioxide as it grows. A study by the Argonne National Lab concluded that E85 produced from corn resulted in an 18%-25% reduction in greenhouse gases. E85 is more flammable than gasoline at low temperatures (32°F), but less flammable at normal temperatures. Pure ethanol is non-toxic, water soluble and biodegradable. Producing ethanol from crop, animal or forestry waste materials can reduce emission and provide a very positive energy balance ratio. Additional benefits of ethanol include diversifying our fuel supply and providing alternative markets for farmers.

Emissions reductions achieved by E85 as compared to petroleum gasoline.

Source: *Environmental Protection Agency*

Carbon Monoxide	40%
Volatile Organic Compounds	15%
Nitrogen Oxides	10%
Particulate Matter	20%

Where can I get ethanol?

State and local government and educational institutions can contact Jackie Montgomery of Department of Administration Motor Fleet Management (MFM) at 919-733-7773 about E85 availability for state vehicles. MFM operates one E85 fueling site on Blue Ridge road in Raleigh. E85 is also available at 12 service stations throughout the state. State and local government fleets may purchase E10 in all 100 counties from a state purchasing contract (www.doa.state.nc.us/PandC/fuelcost.htm).

Ethanol Distributors

Osage Inc.

5250 Twelve O'clock Knob Rd.
Roanoke, VA 24018
540-375-6501 Fax: 540-375-6506
Earle Spruill, President
earl@cellcom.roacoxmail.com

Ray Thomas Petroleum, Inc.

www.thomaspetroleum.com
1629 S. Lafayette St.
Shelby, NC 28152
800-262-5453 Fax: 704-484-8869
info@thomaspetroleum.com

United Energy Distributors, Inc

www.unitedenergy.org
PO Box 6987, Aiken, SC 29804
888-207-2009 Fax: 803-642-0115
Nikki Parrish, Alt. Fuels Manager
altfuels@unitedenergy.org

Ethanol Retail Locations (E85 & E10 unless noted)

America's Fuel

801 SW Broad Street
Southern Pines 910-692-7337

Caton's Grocery

5416 Statesville Road
Charlotte 704-535-7182

Clark Cadillac & Chevrolet

35 Dundee Road
Pinehurst 910-295-6101

Cruizer's – E85 only

1914 Sedwick Rd (at Hwy 55)
Durham 919-806-3458

Fuel Land #2 [*]

10222 Johnston Road
Charlotte 704-543-4600

Gasland USA #3

919 South Lafayette Street
Shelby 704-480-9733

Gasland USA #7

1801 East Dixon Boulevard
Shelby 704-484-9175

Homer's Truck Stop of Statesville

306 Stamey Farm Rd. (I-40 Exit 146)
Statesville 704-871-8008

P.C. Mart

211 E. Woodlawn Rd. (I77 exit 6A)
Charlotte 704-527-9133

Pit Stop – E85 only

2203 Hwy 70 SW,
Hickory 828-322-7867

Snellings Oil Company [*]

2008 Cotton Grove Road
Lexington 336-357-5700

Tommy's Crown

Gary Kennedy Hwy. 15-501
Pinehurst 910-295-0042

[*] E85 temporarily discontinued pending resolution of new regulatory requirements

Resources:

Alternative Fuels Data Center eere.energy.gov/afdc/
American Coalition for Ethanol ethanol.org
National Ethanol Vehicle Coalition e85fuel.com

NC Alt Fuel

Organizations:

NC Solar Center ncsc.ncsu.edu
Triangle Clean Cities Coalition trianglecleancities.org
Centralina Clean Fuels Coalition 4cleanfuels.com

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Ethanol fact sheet for North Carolina is sponsored by the State Energy Office, North Carolina Department of Administration and the U.S. Department of Energy, with State Energy Program funds. However, any opinions, findings, conclusion or recommendations expressed herein are those of the author and do not necessarily reflect the views of either the State Energy Office, North Carolina Department of Administration or the U.S. Department of Energy.