What is ethanol?
Ethanol (ethyl alcohol, grain alcohol, EtOH) is a clear, colorless liquid. In dilute aqueous solution, it has a somewhat sweet flavor, but in more concentrated solutions it has a burning taste. Ethanol (CH3CH2OH) is made up of a group of chemical compounds whose molecules contain a hydroxyl group, -OH, bonded to a carbon atom. Ethanol made from cellulosic biomass materials instead of traditional feedstocks (starch crops) is called bioethanol.

What are ethanol blends?
While pure ethanol is rarely used for transportation fuel, there are several ethanol-gasoline blends in use today. E85 is a blend of 85 percent denatured ethanol and 15 percent gasoline. In certain areas, higher percentages of gasoline will be added to E-85 during the winter to ensure that vehicles are able to start at very cold temperatures. E85 cannot be used in a conventional, gasoline-only engine but can be used in fuel vehicles (FFVs). Another common mix is E10, a blend of 10 percent ethanol and 90 percent gasoline. E10 is available in many areas across the United States and can be used in any gasoline vehicle manufactured after 1980.

What is a Flex Fuel Vehicle?
A Flex Fuel Vehicle (FFV) is a vehicle that can run on a variety of fuel types, including E85 and gasoline. FFVs can be fueled with unleaded gasoline, E85, or any combination of the two. They are available in a wide range of models such as sedans, pickups, and minivans.

How are FFVs identified?
A look inside the fuel door quickly identifies FFVs. Since September 2006, the Energy Policy Act of 2005 requires auto manufacturers to place a label inside the FFV fuel compartment that states the vehicle can run on either E85 or gasoline. Flexible-fuel capability also is outlined in the owner’s manual and encoded in the vehicle identification number, or VIN. To help determine if an older vehicle is E85 compatible, visit the National Ethanol Vehicle Coalition Web page on flexible fuel vehicles at www.e85fuel.com/e85101/flexfuelvehicles.php.

Does E85 affect vehicle performance?
FFVs operating on E85 generally handle and perform just as well as when fueled with gasoline. Sensors in the FFV system automatically prompt adjustments for fuel composition, so emissions and standard performance areas such as power and acceleration are not significantly affected by E85. One difference between E85 and gasoline, however, is fuel economy. Ethanol contains less energy per gallon, which translates into a reduction in fuel economy compared to gasoline. No matter what type of fuel is used, however, fuel mileage is affected by driving habits, weather, ethanol blend in the tank, and other factors. Standard testing results for fuel economy of FFVs and their gasoline counterparts are posted on the combined EPA and U.S. Department of Energy Web site at www.fueleconomy.gov.

What are the costs and benefits of using E85?
Special features enabling vehicles to run on E85 can add a minimal cost to their purchase price. Often these features are standard or even offered as a no-cost option. Because they have a solid performance history, manufacturers provide standard warranties for FFVs equal to those for gasoline vehicles at no additional charge. Fuel, however, may be a cost factor. To compare the price of fueling with E85 vs. gasoline, use the AFDC’s Flexible Fule Cost Calculator at www.eere.energy.gov/fleetguide/cost_anal.php?

Frequently Asked Questions

See inside for Flex-fuel Vehicle Listing

The mission of the Clean Cities Program is to advance the nation’s economic, environmental, and energy security by supporting local decisions to adopt practices that contribute to the reduction of petroleum consumption. Clean Cities carries out this mission through a network of more than 90 volunteer coalitions, which develop public/private partnerships to promote alternative fuels and vehicles, fuel blends, fuel economy, hybrid vehicles, and idle reduction.

Frequently Asked Questions in Tucson

E85 Pump Locations in Tucson
Arizona Petroleum, 1015 S. Cherry
Accessible from East 22nd Street
FastLane Chevron, 1999 E. Ajo Way
On the northeast corner of South Kino Parkway
Loma Catalina Mart, 2075 W. Ruthrauff
On the east side of North La Cholla Boulevard
Quik Mart, 10265 E. Irvington Road
At South Houghton Road
Quick Pic, 2710 N. First Avenue
On the southeast corner of East Glenn Street
Quick Pic, 8601 E. Golf Links
At South Pantano Parkway
Shell, C & T Oil Co., 1701 N. Alvernon
At East Fima Street

Southern Arizona
Chevron, 12030 N. Dove Mountain Blvd
In Marana, just north of West Tangerine Road
Puchi’s Quick Stop, 483 Grand Avenue
In Nogales, Arizona
Super Stop, 795 W. Via Rancho Sahuarita
In Sahuarita, at Exit 75 off of I-19

Maricopa and Pinal Counties
Western States, 450 S. 15th Avenue, Phoenix
Apache Sands, 7602 E. Main Street, Mesa
Ludwig Service , 510 S. Arizona Blvd., Coolidge
Discovery Fuels, 295 S. Arizona Blvd. Coolidge
Chevron, 9080 W. Olive Avenue, Peoria

Yavapai County
Pacific Pride, 900 E. Road 4 North
In Chino Valley, off of AZ-89

Yuma County
Dateland Travel Center, I-8 @ MileMarker 67
Dateland, Arizona

Explore other areas in Arizona
Pima Association of Governments
177 N. Church Avenue, Suite 405, Tucson, AZ 85701
(520) 792-1093 [tel] (520) 620-6981 [fax] www.PAGnet.org
### Listing of flex-fuel vehicles by year, from 1998-2009

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Source: National Ethanol Vehicle Coalition, U.S. Environmental Protection Agency

**Updated October 17, 2008**