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Your Amsoil Information News Source

All About Ethanol Fuel

Typically, for a December issue of Olson Marketing Monthly I will put a beautiful picture of snow falling on a desolate road. Sorry, not this year. This year's December issue is all about Ethanol Fuel. Well, actually it is just "some" about Ethanol Fuel. I am limited to only four pages as I have found that most people don't like to read extensively, in depth long articles.

Before I begin this Ethanol journey with you, I want to make it clear that I am not an expert on Ethanol, nor do I work for any type of company or industry that supports or opposes Ethanol. I learn by conducting research which I in turn share with you. Additionally, just an FYI...in this article, when I say Ethanol, I am referring to Gasoline with 10% Ethanol.

As I was doing my research for this month's newsletter it was clear that arguing for or against the use of Ethanol falls in line with arguing religion and politics. So here is the disclaimer: Read what I have to say, conduct your own research, and formulate your own ideas based upon the information you learn.

With that said...let's get started.

To start off, Ethanol is a fuel and fuel additive. In the United States Ethanol is often identified as Gasohol (Gasoline with 10% Ethanol) or E85 (Gasoline with an 85% Ethanol mix).

According to Space.com, Ethanol may also be used as rocket fuel for those of you that dabble in rocket science on the side of your day job.

I live in Omaha, Nebraska, and for the last many number of years Ethanol was always 10 cents per gallon cheaper than the "regular" gasoline. And that is the way it was and has been for many years. In my early twenties I would drive up to the gas station, see the price on the pump and not think twice about filling up with the "cheaper" gasoline. It wasn't until I was about 25 that I actually did the math and realized that although Ethanol is cheaper at the pump, when you calculate in the reduced fuel economy, the "regular" gasoline is actually cheaper per mile.

That all changed within the last couple months.

Are you interested to find out more? Keep reading!

What's inside?

New Dealer

Jeffery Minor
Council Bluffs, IA

New Preferred Customer

Jacob Jirovec
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What is cheaper? Ethanol or "Regular"

I recently heard an advertisement on the radio promoting the use of Ethanol in your car. It ended by saying, "Do the math, compare the price per mile and you'll see that Ethanol is cheaper." I instantly remembered that I had already, previously, done the math and the "regular" gasoline was cheaper. What I hadn't done was read the newspaper recently.

The Omaha World Herald put out a news article on September 27th talking about the changes. In short, they are phasing out the use of 87 Octane without ethanol (what I define as "regular" gasoline). Not long after hearing the radio advertisement I noticed that Ethanol gasoline was 23 cents cheaper per gallon than the Regular gasoline. Wow, what a difference than the previous 10 cent difference.

Since I like doing research and experiments, I decided to put the math to the test. In my wife's 2008 Elantra I keep track of the gas mileage. When 87 Octane ("regular") fuel became unavailable and I had to purchase 87 Octane with Ethanol, I continued to keep track of my fuel/cost data. In a nut shell, this is what I found out.

1. The Average Miles Per Gallon had virtually no change when running the 87 Octane No Ethanol compared to the 87 Octane With Ethanol. (Highlighted in Orange at right.)

2. By using 87 Octane with 10% Ethanol I save $0.01 per mile. (Highlighted in Green at right.)

2008 Hyundai Elantra Fuel Comparison Data

Date	Trip Meter	Cost/Gallon	Total Gallons	Total Cost	Notes	Miles Per Gallon (Fuel Economy)	Average MPG	Cost Per Mile	Cost of No Ethanol Gasoline	Comparable Cost Per Gallon Using Avg MPG of No Ethanol Gasoline
8/6/2013	294.2	3.539	10.97	$38.82	87 Oct. No Eth.	26.82		$0.13		
8/19/2013	284.3	$3.419	10.304	$35.23	87 Oct. No Eth.	27.59	27.01	$0.12		
9/7/2013	286	$3.579	11.464	$41.03	87 Oct. No Eth.	24.95		$0.14		
9/18/2013	305.4	$3.439	10.643	$36.60	87 Oct. No Eth.	28.69		$0.12		
9/29/2013	191.4	$3.199	7.107	$22.74	87 Oct. 10% Eth.	26.93		$0.12	$3.429	$0.13
10/11/2013	333.6	$3.199	12.051	$38.55	87 Oct. 10% Eth.	27.68	26.98	$0.12	$3.429	$0.13
10/27/2013	307.5	$2.959	11.673	$34.54	87 Oct. 10% Eth.	26.34		$0.11	$3.189	$0.12
11/13/2013	318.7	$2.899	11.825	$34.28	87 Oct. 10% Eth.	26.95		$0.11	$3.129	$0.12

2001 Ford F150 Fuel Comparison Data

I conducted the same calculations with my 2001 Ford F150 and found virtually identical results. When I run the "regular" 87 Octane fuel compared to the 87 Octane with Ethanol Fuel, I have no significant change in my Miles Per Gallon and I would be paying about 1 cent more per mile to use the "regular" 87 Octane fuel.

I want to put it into perspective before we talk about the potential problems with Ethanol.

For the last 5 years I have been running the "regular" 87 Octane fuel with **no** Ethanol. Based upon my calculations, if I choose to still buy the 87 Octane "regular" gasoline I will be paying one cent extra per mile. I can get 250 miles per tank of gas. That means I will be paying an extra $2.50 if I fill up with "regular" compared to the Ethanol blend for a whole tank of gas.

I did however notice that when I ran the 87 Octane with 10% Ethanol, my engine was significantly louder than when I had ran the 87 Octane without Ethanol. Specifically, the engine had a constant light tick, which is known as "knocking". If you are not familiar with "knocking"...it isn't a good thing to have going on in your engine.

On Page 4, I have researched and outlined several of the primary issues with the use of Ethanol Blend Gasolines in vehicles that were designed for non-ethanol gasoline.

87 Octane with No Ethanol???
87 Octane with 10% Ethanol???
How does that work?

Let's clarify a few things first.

The Octane rating of gasoline tells you how much the fuel can be compressed before it spontaneously ignites. A very low octane rating would ignite early due to the compression rather than the spark plug igniting it. It is bad when this happens. It will cause "knocking" which will eventually damage your engine.

87 Octane contains 13 percent heptane. Heptane handles compression very poorly. The lower the octane rating, the higher the heptane rating. Most engine compression ratios (nowadays) are designed to run on 87 Octane Gasoline.

Gasoline refineries can do a number of things to increase the octane rating but it comes at a price. At best, refineries can get the octane rating of gasoline up to 91-93 octane...but again, it comes at a price.

Before this whole "Ethanol changeover thing" you could buy "regular" gasoline that was 87 Octane or you could buy the 10% Ethanol mix which had an Octane rating of 89. Straight Ethanol has an octane rating of 113 so when companies would mix Ethanol with Gasoline, it would raise it the extra 2 points. So now we come around to the big question. If mixing Ethanol with a 113 Octane rating raises the Octane of Gasoline, then why is it that when you pull up to a gas station nowadays, you have a choice between 87 Octane with or without Ethanol?

Remember that radio advertisement I talked about earlier. How they said that it is cheaper to get the Ethanol...and if you go to the pump the Ethanol is 23 cents cheaper than the "regular".

Ethanol has not changed. It is the gasoline that the Ethanol is mixed with that has changed. Oil companies are now distributing cheaper, sub-grade, low-octane gasoline with an octane rating of 84. The local suppliers then mix the 10%, 113 Octane Ethanol to raise the Octane rating mix to 87 Octane.

In my research, it has been noted by several experts that using a gasoline with octane ratings lower than what is recommended by the manufacturer could lead to engine knock and other problems.

So to answer the original question...87 Octane "regular" gasoline is what has been around for a long time and 87 Octane with Ethanol is a mix of cheap gasoline and Ethanol. That is why they are able to sell it for 23 cents less per gallon.

Help Your Fuel System

I keep my fuel system achieving peak operating performance through the use of Amsoil's P.I. Performance Improver.

Every three months I will put one bottle of Amsoil's P.I. in the fuel tank when I fill up. I recommend putting the entire bottle in before you pump your gasoline, so that as the gasoline is going into your tank, it will mix itself. It is safe for use with catalytic converters, oxygen sensors, oxygenated gas and 10 percent ethanol blended gas.

Is Ethanol Bad For Cars?

Ethanol isn't necessarily bad for vehicles, but the average vehicle isn't designed for fuel with Ethanol.

When the U.S. began phasing out leaded gasoline in the 1970's , we saw many of the same problems... vehicles that were designed for leaded fuel began to have problems which had to be addressed by the vehicle manufacturers. In turn they had to change their methodologies in their production and manufacturing processes to adapt to the new fuels.

Potential Problems with Ethanol

Based upon my research and calculations, there is little to no significant difference in fuel economy or cost when it comes 87 Octane Fuels. However, there is a significant difference when you begin looking at the effects of each type of fuel. Because engines/vehicles are designed for 87 Octane "regular" fuel, introducing blended fuels can leads to problems.

Ethanol attracts water and water in your fuel system is not good. Water/Ethanol mixtures sink to the bottom of the tank where the fuel pick-up is. Engines cannot run on an alcohol/water blend and will seize.

Ethanol dissolves plastic and other types of solid materials. Some fuel tanks and fuel lines are made of plastic. The Ethanol will slowly eat away at the plastic. The plastic in turn becomes a jelly like substance that sits on the bottom of your fuel tank ready to get sucked into your fuel system. In some cases Ethanol has been known to dissolve components of the fuel system itself.

Ethanol will create varnish and rust on steel and corrosion on aluminum tanks and fuel lines. The result is contaminated fuel. Ethanol is the worst on fiberglass and many fuel systems are now having to be retrofit with new plastics that can withstand the effects of Ethanol.

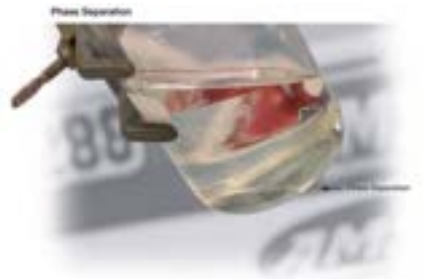
Researchers have also noted that Gas Station attendants are having to change the filters in the gas pumps several times a week because of the negative effects and gumming of the Ethanol fuels.

Consumer Reports, in 2006, noted that use of Ethanol will result in poor gas mileage because Ethanol produces less energy than petroleum when burned. I personally saw this with the old formulations of gasoline (87 Octane vs. 89 Octane with Ethanol). For this newsletter I recalculated using the new gasoline formulations (87 Octane vs. 87 Octane with Ethanol), and found that in both my vehicles the gas mileage did not significantly change.

Ethanol has been linked to Oxygen Sensor malfunction and Check Engine Lights coming on due to the computer not being able to measure the oxygen correctly with how rapidly ethanol burns since the computer is designed to measure "regular" gasoline mixtures.

The cost of the potential repairs far outweigh the extra $2.50-$3.00 per tank of gas that you will pay by going with the "regular" 87 Octane fuel...if you can find it.

Rumor has it, you won't be able to find fuel without Ethanol soon in some areas. As one method of preventative maintenance in my vehicles, I have switched back to the "regular" 87 Octane gasoline without Ethanol. However, where I live, there are fewer and fewer gas stations that supply the 87 Octane "regular" gasoline.



Dealer's Zone

By Don Olson ZO#4901

Two things have helped my business in the past five years:

First, I purchased the "canned" dealer website from AMSOIL www.amsoil.com. You can find it by logging in, clicking on the Services section, then Dealer Websites, then Basic Dealer Site Application. It costs 30.00 to set up and first year fee; then $20.00 annually.

Secondly, I purchased 500 business cards from the Print Shop that AMSOIL recommends for printing business cards. You can find it by logging in and selecting the "Print Center" button located on the right side of the page. Be sure you already have your website activated (usually takes 5 to 7 business days) so you can have it printed on your new business cards.

I use the "standard, original" card that is offered, though there are several different cards you can choose from. Then I hand them out at every opportunity. I ensure I have my "referral" number on the cards as well as my name, address, phone, e-mail address and website information. It is amazing how many people will utilize the business card information. I get calls, visits to my website, and e-mails on a regular basis. Then I take each call or e-mail individually and work with the person whether it is just getting them information, or helping them to put in an order.

Take a look!
www.lubedealer.com/4901

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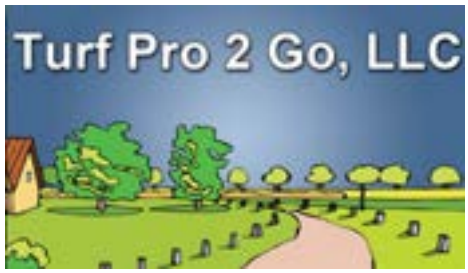

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Send me a link to your website and information on how you can be contacted by our wonderful dealer/customer database.

Current circulation over 2500 across the Continental United States, Canada and Alaska … and growing

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