Your Amsoil Information News Source

Product Highlight:

P.i. Performance Improver Gasoline Additive

AMSOIL P.i. is the most potent gasoline additive available today. As a concentrated detergent, it is unsurpassed in cleaning combustion chamber deposits, intake valve deposits and port fuel injector deposits. AMSOIL P.i. helps maintain peak engine efficiency, fuel economy, power and drivability in newer low mileage engines. In engines with accumulated deposits, testing showed AMSOIL P.i. provided the following cleanup benefits after only one tank of gasoline:

Improves fuel mileage an average of 2.3% and up to 5.7%

- *Reduced emissions
- *Restored power and performance
- *Better drivability
- *Smoother operation

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Omaha - Insane Oil

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Congratulations:

New Amsoil Dealer

Steve Lewis Humboldt, NE

New Retail Account

88 Tactical Omaha, NE

New Commercial Account

Lincoln Windustrial Co. Lincoln, NE

New Preferred Customers

Tyler Brown Lincoln, NE

Addison Inge Hampton, VA

New Catalog Customers

Jim Sords Saint Petersburg, FL

Josh Gadenberg LaCenter, WA



Results: 2008 Hyundai Elantra Case Study...Part 1

The results are in...but I am in the process of analyzing the data from all six oil samples and can't share any of the oil sampling results with you yet. What I can share with you is the fuel analytic results over the past six months.

Fuel data was collected and analyzed over the past six months on a 2008 Hyundai Elantra directly succeeding a complete engine rebuild. During the first three months, OEM oil was installed; Valvoline VV1740 5W-20 (also known as Daily Protection Conventional Motor Oil). Following this, Amsoil OE 5w-20 100% Synthetic Motor Oil was installed.

Many individuals have noted that switching to Amsoil 100% Synthetic Motor Oil has improved their fuel economy. McGhee (2017) found an increase from 18.55 mpg to 19.65 mpg after switching from dealer installed GM oil to Amsoil Signature Series 5W-30 in his 2012 GMC Denali. ProStreetCamaro (2007) noted a 1.5 to 2.0 mpg increase after having tried both Mobil 1 5W-30 Maxlife and Pennzoil Platinum 5W-30 prior to switching his 1999 SS Camaro to Amsoil Signature Series 5W-30 100% Synthetic Motor Oil while keeping driving habits the same. Elcamino (2017) changed the factory fill of Mobil 5W-30 to Amsoil Signature Series 0W-30 in his 2009 AWD Cadillac CTS 3.76L and improved his fuel economy from 21.7 to 24.1. It was also noted that the average miles per gallon has remained consistent at 23.9 to 24.1 for five years over 40,000 miles.

Although there is substantially more qualitative evidence that can be found to support the theory that Amsoil 100% Synthetic Motor Oil increases fuel economy, others have noted no difference in calculated fuel economy when switching to Amsoil (Demarpaint, 2005, MrSleepy, 2006).

This research study was conducted on a 2008 Hyundai Elantra. This study is primarily centered around the question, "Which oil protects the engine better, Hyundai OEM or Amsoil OE?" The study methodologies provided an opportunity for the assessment of fuel economy to validate the consistency of and demonstrate the reliability of the testing methods and procedures. In addition, analyzing fuel data could help answer the question, "Will switching to Amsoil OE 5W-20 100% Synthetic Motor Oil increase fuel economy over Hyundai OEM motor oil?"

Each oil was run for three months in accordance to the manufacturer's specifications. Fuel data was logged throughout the time frame and recorded on a spreadsheet. Table 1 and Table 2 on the succeeding page displays all collected fuel economy data. Table 1 displays the 3 month fuel log with the OEM Motor oil (Valvoline VV1740 5W-20) and OEM oil filter that was installed from he dealership. Table 2 displays the 3 month fuel log with Amsoil OE 5W-20 100% Synthetic Motor Oil and WIX 51334 Oil Filter.

Fuel economy calculations took

the mileage traveled between fill-ups (Column 3; 'Trip' - highlighted in yellow) divided by the number of gallons (Column 5; 'Total Gal' - highlighted in blue) required to fill the tank during the corresponding period. The resulting quotient was rounded to the hundredths place and noted on the corresponding line (Column 9; 'MPG' - highlighted in green). Fuel economy was then averaged by month (Column 10; 'MPG Avg by Month' - highlighted in purple) and again averaged for the total duration of three months (Column 11; '3 Month MPG Average' - highlighted in orange).

In total, during the first three period (Valvoline month VV1740) there was 2,363 miles traveled. Throughout this time there were nine trips to the gas station. During the second three month period (Amsoil OE) there were 2,533 miles traveled and an additional nine trips to the gas station. The data collected reveals that a comparable number of miles were driven during the first three months compared to the second three months and that there was an identical number of visits to the gas station.

Limitations

There is, however, several inconsistencies in the time line when fuel data is compared to oil change intervals. Table 1 begins on July 28, 2018, the date the ve-

Continued on page 4...

Table 1

2008 Hyundai 3 Month Fuel Log, OEM Oil Installed: Valvoline VV1740 5W-20 (Daily Protection Conventional Motor Oil)

Date	Mileage	Trip	Cost/Gal	Total Gal	Total Cost	Where Purchased	Notes	MPG	MPG Avg by Month	3 Month MPG Average
7/28/2018	89318	217.7	2.859	7.737	\$22.12	Conoco, Fort Morgan, CO	85, Post- Engine Repair	28.14		
7/28/2018	89655	336.2	2.699	10.508	\$28.36	Loves, Aurora, NE	87+ Ethanol	31.99	1st Month	
8/2/2018	89943	288.7	2.459	10.176	\$25.02	Sam's Club, Omaha, NE	87+ Ethanol	28.37	28.14	
8/12/2018	90155	211.4	2.499	8.058	\$20.14	Sam's Club, Omaha, NE	87+ Ethanol	26.23		
8/25/2018	90423	268.4	2.429	10.226	\$24.84	Sam's Club, Omaha, NE	87+ Ethanol	26.25	2 nd Month	27.32
9/9/2018	90683	259.5	2.459	9.946	\$24.46	Sam's Club, Omaha, NE	87+ Ethanol	26.09	26.25	
9/18/2018	90938	255.3	2.489	9.748	\$24.26	Sam's Club, Omaha, NE	87+ Ethanol	26.19		
10/3/2018	91229	291.1	2.569	11.054	\$28.40	Sam's Club, Omaha, NE	87+ Ethanol	26.33	3 rd Month 26.19	
10/13/2018	91465	235	2.569	8.93	\$22.94	Sam's Club, Omaha, NE	87+ Ethanol	26.32		

Note. Gal = Gallon; MPG = Miles Per Gallon

Table 2

2008 Hyundai 3 Month Fuel Log, Amsoil Oil Installed: OE 5W-20 100% Synthetic Motor Oil

Date	Mileage	Trip	Cost/Gal	Total Gal	Total Cost	Where Purchased	Notes	MPG	MPG Avg by Month	3 Month MPG Average
10/21/2018	91762	296.9	2.539	10.574	\$26.85	Sam's Club Omaha, NE	87+ Ethanol	28.08		
11/1/2018	92068	306.9	2.499	11.434	\$28.57	Sam's Club Omaha, NE	87+ Ethanol	26.84	1 st Month	
11/9/2018	92303	234.6	2.399	9.108	\$21.85	Sam's Club Omaha, NE	87+ Ethanol	25.76	28.08	
11/16/2018	92538	234.8	2.359	8.465	\$19.97	Sam's Club Omaha, NE	87+ Ethanol	27.74		
12/1/2018	92818	280	2.039	11.079	\$22.59	Sam's Club Omaha, NE	87+ Ethanol	25.27	2 nd Month	27.22
12/15/2018	93112	293.9	2.039	11.041	\$22.51	Sam's Club Omaha, NE	87+ Ethanol	26.62	25.27	
12/23/2018	93373	260.6	1.969	9.325	\$18.36	Sam's Club Omaha, NE	87+ Ethanol	27.95		
1/2/2018	93673	299.8	1.899	10.927	\$20.75	Sam's Club Omaha, NE	87+ Ethanol	27.44	3 rd Month 27.95	
1/11/2018	93999	325.9	1.899	11.125	\$21.13	Sam's Club Omaha, NE	87+ Ethanol	29.29		

Note. Gal = Gallon; MPG = Miles Per Gallon

Results: 2008 Hyundai Elantra Case Study...Part 1

...continued from page 2

hicle was picked up and driven from Colorado to Nebraska. The oil change date, indicated by the Hyundai dealership, was July 18, 2018 (10 days prior). The first gas station noted on Table 1 is in Fort Morgan, CO which is about 93 miles from where the vehicle was picked up in Denver, CO. The Trip read 217.7 miles at the time of refueling. Prior to this the last refueling was on July 8, 111 miles away from where it broke down. Thus, the first 111 miles of the 217.7 mile Trip was running the previous oil, Amsoil Signature Series. The last 93 miles was running the Hyundai OEM oil.

In addition to this inconsistency, Table 1 ends on October 12, 2018. The Valvoline VV1740 motor oil was removed from the vehicle and replaced with Amsoil OE on October 18, 2018. Table 2 then begins on October 21, 2018, thus data collected for Table 2 includes four days of fuel efficiency data from the first three months. This estimates to approximately 150 miles of data that could be calculated into the first three months. However, after further calculations it was determined that these inconsistencies with the time line are statistically insignificant with regards to the overall time line.

Additional differences can be attributed to the type of driving. The first month running Valvoline VV1740 include a 539 mile nonstop interstate drive from Denver, CO to Omaha, NE whereas the first month running Amsoil OE

included several 59 mile interstate drives from Omaha, NE to Lincoln, NE and back.

Fueling Procedures

There was a considerable amount of effort to ensure the same type of fuel was used from the same filling station and even from the same bank of pumps. With the exception of the first two fill ups, each tank was filled with 87+ gasoline from the same location. This gasoline has up to 10% ethanol and is most readily available in the Omaha Metro area. When filling the tank the researcher would activate the pump handle lock and allow the pump to automatically disengage the trigger once the tank was filled. The researcher did not "top off" the tank during any filling session and no gasoline additive was used during the entire six months of data collection.

Results

Fuel economy differences between Valvoline VV1740 5W-20 (Daily Protection Conventional Motor Oil) with a Hyundai OEM Oil Filter and Amsoil OE 5W-20 100% Synthetic Motor Oil with a WIX 51334 Oil Filter were statistically insignificant.

Based on the data, over the first three months time frame the vehicle traveled 2,363 miles and used 86.383 gallons of gasoline. The average fuel economy for the first three months, running Valvoline VV1740, was 27.32 miles per gallon.

During the succeeding three months time frame the vehicle traveled 2,533 miles and used 93.078 gallons of gasoline. The average fuel economy for the second three months, running Amsoil OE, was 27.22 miles per gallon.

The results indicate that by switching to Amsoil OE, fuel economy decreased 0.1 miles per gallon. Given the considerations discussed in the Limitations portion of this research it is assumed that there is a very small margin of error thus making the fuel economy differences between Valvoline VV1740 and Amsoil OE statistically insignificant.

However, given that the data from the fuel log analysis between each motor oil is virtually the same, this validates that the researcher's driving type and style remained consistent throughout the duration of the data collection time frame and no bias was exercised during the first three month time frame or the second three month time frame. This also confirms the validity and the reliability of the oil sampling process. It shows that the vehicle wasn't "driven nicer" or "driven harder" while a specific oil was installed in the vehicle.

Next Month

Next month I will begin taking a look at the results of the oil sampling. The question we are trying to answer is, "Which oil protects the engine better, Hyundai OEM or Amsoil OE?"

Shop Talk...

with Dr. Jonathan D. Olson, EdD ZO #10458

Additional Thoughts

When my vehicle originally broke down the closest mechanic that was open was a Firestone Auto Service center. We had already driven 110 miles since we had last filled up the gas tank when we finally pulled off the road. It was 1 mile to Firestone. That brings the Tripometer to 111 miles at the time Firestone began working on it. The distance between Firestone and the Hyundai dealership is about 8 miles. The first gas station noted on Table 1 is in Fort Morgan, CO which is about 93 miles from where the vehicle was picked up in Denver, CO. The Trip read 217.7 miles at the time of refueling. This leaves roughly 6 miles unaccounted for. That 6 miles is the total mileage that both Firestone and Hyundai "test drove" the vehicle.

When I picked up the vehicle from Hyundai I asked the service manager, "Do I need to change the oil when I get home since it will be around 500 miles, for the break-in cycle?" He responded by telling me that they had already taken it through the break-in cycle and I don't need to change the oil until 3 months or 3000 miles, which ever comes first.

I understand that Hyundai runs a business and doesn't have time to drive it around for 500 miles but, now that I have reviewed all the mileage numbers, I feel a little deceived. But I do greatly appreciate them honoring their warranty.

Dealer's Zone

By Don Olson ZO #4901

AMSOIL Runs on Freedom

Maybe you've heard of powersports or automotive dealerships pressuring people into buying the manufacturer's brand of parts or lubricants to avoid losing their factory warranty. It may have happened to you. If so, it probably left a bad taste in your mouth.

That's because no one likes to be told what to buy. And no one likes to be taken advantage of.

Why do some dealerships issue veiled threats of new-vehicle or new-equipment warranty denial if you choose a different brand of parts or lubricants? In part, it's to boost sales of their own products.

Fortunately, in America, the federal Magnuson-Moss Warranty Act protects your freedom to choose the brands of parts and lubricants you think are best. It also protects your right to extend oil-change intervals beyond what's specified in your owner's manual without fear of voiding your factory warranty.

Get the facts about your rights

U.S. Federal Law

- It is illegal to tie warranty coverage to whichever brand of parts or lubricants you use. Manufacturers that do so must provide the parts or lubricants free of charge.
- You have the freedom to choose how you protect your vehicles and equipment, including

extending drain intervals.

• Manufacturers can't deny warranty coverage without showing the aftermarket part or lubricant caused a failure.

If anyone tries to tell you differently, contact us at tech@amsoil. com or 715-399-TECH and we'll set the record straight.

Guaranteed performance

Like our products, the AMSOIL Limited Warranty is built with an extra measure of protection. While some other oil companies guarantee their products only until you reach a specified mileage, we don't place restrictions on our warranty coverage based on total vehicle miles.

We stand behind our products for as long as you use them.

AMSOIL products are <u>Warranty</u> <u>Secure</u>, keeping your factory warranty intact. They are high-performance replacements for vehicle/ equipment manufacturer-branded products.

Thanks for reading our newsletter, your input, comments, criticisms and opinions are all read and considered for future newsletter articles. If you have a newsworthy story regarding your use of any AMSOIL product, please let us know and we'll try to work it in to the newsletter.

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