

Olson Marketing Monthly

June 2016 - Issue #58

Your Amsoil Information News Source

Product Highlight: **Signature Series 5W-20 Synthetic Motor Oil**

[AMSOIL Signature Series Synthetic Motor Oil](#) is engineered to outperform conventional and synthetic motor oils. It combines industry-premier synthetic technology with AMSOIL premium additives in a unique formulation that exceeds the higher performance demands of modern engines. Signature Series delivers the performance and value upon which the AMSOIL reputation is built. The culmination of more than 40 years of expertise, its exclusive formulation raises the bar for motor oil performance.

Both of my vehicles use [Amsoil Signature Series 5w-20 Synthetic Motor Oil](#). I drive a 2001 Ford F150 with 118,000 miles on it. We purchased the vehicle in 2011 and have ran Amsoil ever since. My wife drives a 2008 Hyundai Elantra with 68,000 miles on it. We purchased it new from the dealer and have switched to all Amsoil products once the vehicle hit the first 500 miles.

On the succeeding pages we will take a closer look at [Amsoil's Sig-](#)

[nature Series 5W-20 Synthetic Motor Oil](#) from an oil analysis standpoint. Following this months newsletter we will compare the baseline results with both of my vehicles to see how Amsoil holds up over 12 months of service.



What's inside?

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Congratulations:

New Preferred Customers

Shane Shandera
Utica, NE

Jasa Zunaibi
Lincoln, NE

Dealer Contact

Lincoln

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402-489-3930

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Oil Analysis

Signature Series 5W-20 Synthetic Motor Oil Baseline - New Oil Sample

	Wear Metals (ppm)										Contaminant Metals (ppm)			Multi-Source Metals (ppm)						Additive Metals (ppm)				
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorous	Zinc
1	0	0	0	0	0	0	0	0	0	0	6	2	2	0	152	0	0	0	212	15	3604	0	711	799

I wanted to provide you with a basic understanding of reading the results of an oil analysis report as well as highlight some of the key areas that we will be looking at as we compare a new sample of oil to a sample that has been in service for 12 months.

The first portion of the oil analysis report (referred to as the spectrochemical portion) identifies the concentration of specific elements. The concentration is identified in ppm...or parts per million of the sample tested. Highlighted in gray (above) we have several categories. The categories are as follows; Wear Metals (ppm), Contaminant Metals (ppm), Multi-Source Metals (ppm), and Additive Metals (ppm).

Wear elements indicate elements that would suggest wear is occurring in your engine. For example, if your analysis indicates abnormal or critical levels of iron, it is likely that components within your engine (that are made of iron) are wearing off and particles are being introduced to your engine oil. Specific iron components include iron cylinders, piston rings, camshafts, crankshafts, gears, rocker arms, valve bridges, cam follow

rollers, etc. Additionally, cylinder heads, rust, hydraulic/compressor bearings, gears, vanes and cylinders can all lead to high iron results in your oil analysis.

The chart below identifies 21 different elements and how they become a presence in your oil.

We can see from the report (above) that Calcium was identified as having a presence of 3604 ppm in the baseline oil sample and according to the chart (be-

low), calcium is an additive. Because of this, it would make sense to have calcium show up on the report.

Further research into calcium indicates that calcium is related to the detergent additive package which is commonly used in engine oils. Detergents are used as lubricants to aid in the control of deposits and keep contaminants suspended in the oil so they can be carried to the filter and removed.

ELEMENTS AND THEIR SOURCES				
Element	Symbol	W Wear	A Additive	C Contaminant
Iron	Fe	✓		
Chromium	Cr			✓
Manganese	Mn		✓	
Lead	Pb		✓	✓
Tin	Sn			
Aluminum	Al	✓		
Silver	Ag			
Nickel	Ni			
Copper	Cu		✓	
Silicon	Si		✓	✓
Boron	B		✓	
Sodium	Na		✓	✓
Barium	Ba		✓	
Magnesium	Mg	✓	✓	
Calcium	Ca		✓	
Phosphorus	P		✓	
Zinc	Zn	✓	✓	
Molybdenum	Mo		✓	
Titanium	Ti	✓		
Vanadium	V			
Potassium	K			✓

Oil Analysis...continued

Sample #	Sample Information							Contaminants			Fluid Properties					
	Date Sampled	Date Received	Lube Time	Unit Time	Lube Change	Lube Added	Filter Change	Fuel Dilution	Soot	Water	Viscosity 40°C	Viscosity 100 °C	Acid Number	Base Number	Oxidation	Nitration
			h	h		gal		% Vol	% Vol	% Vol	cSt	cSt	mg KOH/g	mg KOH/g	abs/cm	abs/0.1 mm
1	06-Apr-2016	08-Apr-2016	0	0	Unk	0	Unk			<.1 - FTIR		9.1		11.0	49	6

Additional information on the oil analysis report notes information on the physical characteristics and properties of the oil. It also notes the presence of certain negative contaminants. Of all of the sections, it provides the greatest information as to the oil's serviceable condition.

In the Sample Information section (above), it is noted that I took the sample on April 6, 2016. I have zero hours of use on this oil sample, as it was a baseline sample that I will be comparing my samples that have been in service for 12 months and I did not change the oil or filter (again...as it was a baseline sample).

Under the contaminants section, it is noted that there is less than one tenth of one percent of water. The presence of water in a "used oil" sample could suggest an internal coolant leak, or condensation or contamination from an outside source. Water reduces the lubricant's lubricity, accelerates corrosion and increases the formation of acids.

The last section looks at the actual fluid properties. All levels that were reported on the baseline sample were well within the normal level.

Increases in viscosity are caused by contamination, oxidation and/or volatility. Circulation and sludging problems can then develop. Decreases are caused by fuel dilution or shearing of viscosity modifiers, either of which can result in a loss of lubricity.

The Total Acid Number measures the acidity level of the oil and are reported for all non-engine (except natural gas) automotive and industrial lubricants.

The Total Base Number (TBN) is a measure of the reserve capability of the oil to counteract (neutralize) acid formation from combustion by-products. It is typically evaluated for gasoline and diesel engine oils. TBN values decrease over the service life of a lubricant as it neutralizes acidic materials. TBN is general reported only on

engine oil analysis. A simple explanation can be thought of for TBN...as you "use" your vehicle between oil changes, the TBN gets "used" up. When the TBN is all "used" up it is at zero and the oil will no longer effectively work in your engine.

The last two items are Oxidation and Nitration. Oxidation causes viscosity increase, solids and acid formation, lacquer deposits and shortened oil and equipment life. Nitration causes sludge buildup and varnish. It can also cause acid by-product formation which can lead to rapid oil degradation.

I am hoping at this point you have a better understanding for the general principles of oil analysis as well being able understand the results of an oil analysis report.



Shop Talk... with Jon Olson

As we are talking about oil analysis, I did want to point out that items within the oil analysis reports are coded to assist you in reading the reports. Below shows the key to the report coding.

0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

Fortunately, someone knew that I would be attempting to read these reports some day and decided to color code the results. This allows me to quickly look at my report and see the areas that are of concern. For example:

Fluid Properties					
Viscosity 40°C	Viscosity 100 °C	Acid Number	Base Number	Oxidation	Nitration
cSt	cSt	mg KOH/g	mg KOH/g	abs/cm	abs/0.1 mm
	8.8		2.80	40	11
	9.7		2.36	54	16

Next month, we will be taking a look at one of my vehicles and comparing the results to the baseline results. This will be the ultimate test to see if [Amsoil Signature Series 5w-20 Synthetic Motor Oil](#) can actually “last” for an entire year and still protect my engine. The following month we will be taking a look at my other vehicle and doing the same with the results.



Dealer's Zone

By Don Olson ZO#4901

Altrum

Increase your personal health as well as increasing your personal worth. Use and offer to your customers the full line of [ALTRUM](#) natural Food Supplements.

I have been using food supplements for many years and feel they are an important part of my life. I feel that giving my body the nutrients it needs has helped me stay off of pharmaceuticals most of my life ... at least not being strapped with having to take something I feel is counter-productive “for the rest of my life”.

I started around 1970 taking the AMWAY Double X food supplements, then went to Shaklee food supplements, and finally I have settled on most of the [ALTRUM](#) line of supplements, but I also like three or four of the Mannatech brand. I feel that I need to be in charge of my body instead of the doctors.

I spend time reading about supplementation, herbal remedies and I rely mostly on holistic health doctors and proven herbal remedies.

I do realize there is a time and place when a pharmaceutical (drug) is beneficial, however, I hope never to be locked in “for the rest of my life” taking drugs that are not beneficial to my overall, long-term health.

AgGrand

Now a few words about [AG-GRAND Liquid Organic Fertilizers](#) for home and farm.

Healthy soil is happy soil and var-mints and weeds mostly don't like happy soil.

I use [AGGRAND](#) on my lawn, shrubs, flowers, garden, trees, ... well, living plants. Anything that survives in the dirt.

[Liquid Lime](#) is a great way to ensure your soil is Ph. Balanced and slightly alkaline. Its great on lawns, but works really well on pastures and hayfields. It is specifically formulated for foliar and root applications.

Find out more information or ordering at www.aggrand.com or call the order line at 1-800-956-5695 using your ZO Number or referral Number 4901.

Also check out AGGRAND's:

[Liquid Bonemeal](#)

[Liquid Natural Kelp & Sulfate-of-Potash](#)

[Liquid Natural Fertilizer 4-3-3](#)

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