Your AMSOIL Information News Source

NEW Product Highlight 5W-40 Metric Motorcycle Oil

AMSOIL adds to their line-up 5W-40 Metric Motorcycle Oil. Specially engineered for maximum performance in engines and transmissions on four-stroke metric sport bikes, cruisers, touring motorcycles and adventure bikes. Wet-clutch compatible for smooth, confident shifts. Robust heat resistance and wear protection. Maintains viscosity. Advanced detergency cleans critical components.

REDUCES FRICTION, HEAT & WEAR

- Exceeds the standard for hightemperature film strength to deliver excellent wear protection.
- Keeps engines running cool by effectively reducing friction and heat.
- Contains a heavy treatment of anti-wear additives to reduce wear regardless of operating conditions.
- Extremely resistant to volatility and engineered to prevent damaging sludge and carbon deposits for superior engine cleanliness.

SMOOTH, CONFIDENT SHIFTS

Contains no friction modifiers and promotes smooth shifting and positive clutch engagement.

Engineered to control heat and prevent slippage and glazing, promoting long clutch life.

CONTROLS FOAM

Contains advanced anti-foam additives that help prevent foam for reliable wear protection, allowing riders to confidently push their bikes to the limit.



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Dealer Contact

Lincoln - Olson Marketing

Don & Peg Olson ZO Referral# 4901 402-310-6414

http://om.shopamsoil.com lubedealerdon@gmail.com

Omaha - Insane Oil

Dr. Jonathan D. & Stacey L. Olson ZO Referral# 10458 402-990-7940 (text or call)

http://insaneoil.com

info@insaneoil.com

Oil Analysis Updates - 2008 Hyundai Elantra

I like to frequently provide some Oil Analysis related information as I have grown to believe that Oil Analytics is one of the best ways to get a snapshot of the health of your oil and the health of your engine.

The chart at the bottom of the page has the most recent report for my 2008 Hyundai Elantra. For several years, we were experiencing extremely high fuel dilution issues as well as very low fuel economy. After much research and a little bit of pulling my hair out trying to figure out what was going on, it was determined that because this vehicle consistently was driven extremely short trips (less than 2 miles at a time), the engine was never allowed to heat up fully. Thus, running a cold engine, short trips, on a daily basis, for years led to both the high fuel dilution and low fuel economy.

The reasoning for this was because my son drove this vehicle to and from high school and to and from work, five times per week, for multiple years. After graduating high school he now drives it two and from college which is an hour away. This change has resolved both the low fuel economy as well as the high fuel dilution issue.

The concept to think about is, "Do I drive very short distances on a daily basis and never let the engine warm up?" If you answer "Yes" to this question. It is possible you have high fuel dilution in your oil. The problem with this is that high fuel dilution leads to a decrease in viscosity (and other issues) which then leads to increased wear within the engine. This problem is exacerbated if you are running substandard or poor quality oil. Fortunately, I

was running AMSOIL Signature Series during these high fuel dilution years. AMSOIL Signature Series oil is engineered to withstand more challenging applications and provide superior protection.

Shown in the analytic report at the bottom of the page, the years of 2021 and 2022 showed acceptable ranges of wear metals that were very similar to the years of acceptable levels of fuel dilution (2023 and 2024). The most noticeable difference is with the viscosity. Given that new oil is 9.1 cSt, high fuel dilution oil is about 7.1 cSt, and the acceptable fuel dilution oil is about 8.4 cSt.

In a nut shell, everything is looking good so far. The only concern is having to add 1 quart of oil over the past year, which is something I have never had to do in this vehicle prior.

		ı	Wear Metals (ppm)								Contaminant Metals (ppm)			Multi-Source Metals (ppm)					1)	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	Phosphorus	Zinc	
BL	0	0	0	0	0	0	0	0	0	0	6	2	2	0	152	0	0	0	212	15	3604	0	711	799	
1	12	1	0	1	10	0	1	0	0	0	17	1	0	0	79	0	1	0	185	846	1132	0	662	752	
2	8	1	0	3	7	0	3	0	0	0	16	5	1	0	77	1	1	0	197	919	1207	0	721	849	
3	13	1	0	2	7	1	2	0	0	0	14	4	0	0	75	0	1	0	180	1061	1290	0	729	867	
4	9	1	0	3	4	1	1	0	0	0	13	6	1	0	201	1	1	0	268	948	1209	0	676	813	
	Sample Information									Contaminants							Fluid Properties								
	<u> </u>																					_	_		

	-	Jampi	CIIIIOII	TIGGOTT					Contaminants	ridia rioperties							
Sample #		e Received	Lube Time	Unit Time	e Change Lube Added		er Change	Fuel Dilution	Soot	Water	Viscosity 40°C	Viscosity 100 °C	a Acid Number	Base No. D4739	oxidation /	ه Nitration	
San	Date	Date	mi	mi	Lube	qt	Filter	%	%	%	cSt	cSt	KOH/g			0.1mm	
BL	06-Apr-2016	08-Apr-2016	0	0	Unk	0	Unk			<.1 - FTIR		9.1		11.0	49	6	
1	19-Sep-2021	24-Sep-2021	1193	101902	Yes	0	Yes	>5 - GC	<.1	<.1 - FTIR		7.3		3.03	13	10	
2	31-Mar-2022	06-Apr-2022	904	102806	No	0	No	>5 - GC	<.1	<.1 - FTIR		7.0		6.69	10	10	
3	19-Mar-2023	22-Mar-2023	3523	106437	No	0	No	2.2 - GC	<.1	<.1 - FTIR		8.2		4.16	10	10	
4	18-May-2024	29-May-2024	4118	111619	Yes	1	Yes	1.7 - GC	<.1	<.1 - FTIR		8.6		3.96	16	5	

Oil Analysis Updates - 2019 Jeep Compass

Another vehicle that I do oil analysis reporting on is our 2019 Jeep Compass. We purchased this vehicle brand new in 2019. I started by running the OEM factory oil for 500 miles. I then added Amsoil Engine Flush and idled the engine for 15 minutes. Afterwards, I immediately dumped the oil and filter and replaced it with Amsoil Signature Series. This is what I have run since. I also run Upper Cylinder Lubricant with almost every fuel tank of gas as well as Performance Improver about 3 times per year. The only other thing I do is work through my monthly maintenance list (checking fluids, cleaning air filter, etc.) every month.

Even though the specific engine used in this vehicle is known for high oil consumption issues, I have never had to add more than one quart of oil throughout the entire year. Additionally, based upon the report, this past year has shown the lowest level of wear since we have owned the vehicle.

The fuel dilution is probably higher than is expected as my wife drives this vehicle to and from work, which is less than 2 miles away. In addition, it is our go-to vehicle for running errands. Thus, as seen with the Elantra, having a lot of short trips will increase fuel dilution. The difference with the Jeep Compass (compared to the Elantra) is that we will drive it longer distances throughout the week.

I am very impressed with the results from the oil analysis report, even though I have not been super impressed with the engineering that went into this particular

vehicle (more specifically talking about the programing of some of the various electronic systems on the vehicle).

One area where I disagree with, Financial Consultant, Dave Ramsey is with the purchase of brand new vehicles. In general, he doesn't recommend buying a new car. However, I believe that if you (1) purchase a "normal person" car (not a luxury, or sports car, etc.), (2) take care of your vehicle by running high quality lubricants and filters, (3) perform the routine maintenance every month, and (4) keep it a minimum of 10 years, then it will be a good investment.

My primary issue with buying a car that is a few years old is that you are inheriting the potential problems caused from poor maintenance from the previous owner.

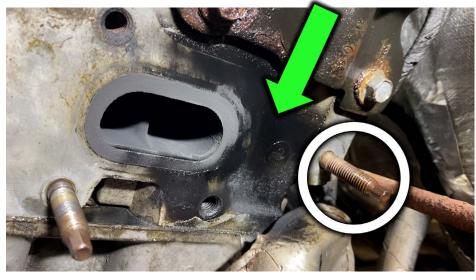
	Wear Metals (ppm)											Contaminant Metals (ppm)			Multi-Source Metals (ppm)						Additive Metals (ppm)					
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc		
BL	0	0	1	0	0	0	0	0	0	0	6	5	0	0	218	0	0	0	330	1023	1356	0	736	861		
1	25	0	0	27	16	1	0	0	0	0	45	9	5	0	232	1	2	0	54	888	1391	0	704	768		
2	15	0	0	18	8	1	0	0	0	0	23	8	0	0	232	1	2	0	68	1005	1385	0	762	853		
3	11	0	0	10	4	0	0	0	0	0	17	7	1	0	210	1	2	0	81	871	1192	0	685	795		
4	11	0	0	8	3	0	0	0	0	0	12	8	1	0	210	0	3	0	44	964	1274	0	715	837		
5	7	0	0	8	2	2	0	0	0	0	11	9	0	0	218	0	1	0	66	963	1232	0	736	790		

											Fluid Properties							
ple #	Sampled	Date Received		Unit Time	Change	Lube	. Change	Fuel Dilution	Soot	Water	Viscosity 40°C	Viscosity 100 °C	Acid Number	Base No. D4739	Oxidation	Nitration		
Sam	Date			mi	rube	qt	Filter	%	%	%	cSt	cSt	mg KOH/a	mg KOH/q	abs /	abs / 0.1mm		
		02-May-2019	0	0	Unk	0	Unk			<.1 - FTIR	, 1388	8.8		9.35	47	6		
BL Z	29-Apr-2019	02-May-2019	U	U	Ulik	U	Ulik			C.1 - 1 11K		0.0		9.55	47	0		
1 2	29-Apr-2020	06-May-2020	8634	9151	Yes	1	Yes	1.6 - GC	<.1	<.1 - FTIR		7.1		3.95	47	12		
2 2	24-Apr-2021	29-Apr-2021	5969	15120	Yes	10	Yes	1.8 - GC	<.1	<.1 - FTIR		8.0		3.59	50	13		
3 2	28-Apr-2022	02-May-2022	4807	19927	Yes	0	Yes	1.4 - GC	<.1	<.1 - FTIR		7.9		4.11	54	14		
4 2	20-May-2023	24-May-2023	7784	27711	Yes	0	Yes	2.2 - GC	<.1	<.1 - FTIR		8.2		2.78	51	14		
5 1	L8-May-2024	29-May-2024	6398	34109	Yes	1	Yes	2.0 - GC	<.1	<.1 - FTIR		8.2		3.56	48	13		

Ford F150 Exhaust Manifold Replacement

This past month I completed a fairly extensive repair on my 2012 Ford F150. By extensive, I speak specifically to the challenges of working in extremely tight locations for many hours at a time. The repair was the replacement of both the driver side and passenger side exhaust manifold on my 2012 Ford F150. Speciality, this vehicle has the 3.5L EcoBoost engine and has known issues of exhaust manifold bolts breaking causing exhaust gasses to leak into the cab (and other issues). I was fortunate enough to not have a broken bolt, but still had exhaust leaking into the cab. Upon further investigation (after the repair was completed), I determined that the exhaust manifold on the driver side had either warped or was manufactured where the mating surface was not true. Either way, the manifold was not sealed to the engine causing exhaust gasses to leak and work their way into the cab.

There were a couple essential keys to successfully completing this repair. First off, it required



a substantial amount of time and patience. It ended up being about 16 hours of filming, followed by another 20-30 hours of editing. If I had a lift and an indoor garage to work in, I think this repair could be completed in one day. That wasn't the case.

Secondly, these components have been on the vehicle for 12 years, through heat and cold, wet and dry. Every bolt had some level of corrosion and required AMSOIL Metal Protector to aid in the removal process.

Thirdly, I had a "rookie moment"

that stemmed from (1) not having very good directions, (2) confusing the acronyms LH (left hand, meaning the driver side in the USA) and RH (right hand, meaning the passenger side in the USA), and (3) knowing that I should disconnect the battery first, but not finding that step in the poor directions. Long story short, I spent an extra four hours running a new ground wire for my starter.

I used an aftermarket exhaust manifold kit from BD Diesel. I was impressed with the quality of construction and the fact that they use all 11 bolt locations rather than the 8 that Ford used.







Other Projects - Authorship

Many of you know that I only work my Amsoil business part time. My full time job is that of a Shop Teacher. My first 7 years of teaching were centered around Small Engines and Automotive Repair and Maintenance. I then did a 4 years stent building one of the largest on-site Construction and Woodworking program in the country. That was then followed by 3 years teaching Welding and Precision Machining. My current role is in both Mechanics and Woodworking. This role, as an educator, has provided me many opportunities to help develop the academic and technical skills of the future workforce. It has also provided many interactions with students. A year ago or so, I decided to put together a book discussing some of these interactions. Although the target audience is intermediate and secondary classroom teachers, the general principles discussed within the book are applicable to all industries. The book is about 150 pages long and is a pretty quick and easy read.

So, I invite you to check it out.



Welcoming Climate Change in Secondary Education

Author: Dr. Jonathan D. Olson

This book is not about long-term shifts in temperature and weather patterns as they relate to a particular geographical area. It is about long-term shifts in students' subjective perception of the school environment. This book is an amalgamation of experiences, empirical research, and continual learning as a professional educator within the secondary education system. Although the general concepts within this book are applicable far beyond the classroom, the target audience for this text is intermediate and secondary classroom teachers.

Every teacher can have a positive impact on students and ultimately change the entire climate of the school building through simple, seemingly insignificant actions. As this text unfolds, the author portrays a pragmatic, methodical thought process to impact students and ultimately become a change agent to the climate within a school building. Additionally, this climate change process can be implemented without adding to your existing workload or deploying a new, expensive program. At the end of this book, you will understand the thought process and procedures that can be easily implemented within an educational or workplace setting. Specifically, I will show you what I have done, and how I have done it.

Feel free to check it out on Amazon



Shop Talk...

with Dr. Jonathan D. Olson, EdD (Independent Amsoil Dealer #10458)

Remember when AMSOIL sold fishing supplies? Actually, as any good business does, AMSOIL has expanded their catalog across many areas, testing out new markets over the years. Some of those products have stood the test of time and others have had a short lifespan. What this tells me is that AMSOIL continues to stay on the forefront of the industry, specifically through utilizing their research and technology and implementing it in new and innovative products.

I still have a bottle of Lure Guard that my dad bought me 25+ years ago. I haven't used it for fishing in many years, but I think there might just still be some life left in

it.

Congratulations to NEW Amsoil Opportunists and Enthusiasts!

Congratulations:

New Catalog Customers

Kam Yiu Redondo Beach, CA

> Bob Holland Las Vegas, NV

Jake Chomisky Whitby, ON

Jason Nemake Victorville, CA

Marc Ryan Curamen Salinas, CA

> Keahnu Lor Wausau, WI

Congratulations:

New Dealer

Toni Rubio Nevada, TX



Congratulations:

New Preferred Customers

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John Salvador Papillion, NE

Jacob Bittner Omaha, NE

Landis Johnson Lincoln, NE

Scott Moormeier Cortland, NE

Jesse Barham Mineral Wells, TX

> Clark Steiner Lincoln, NE

Kevin Komarnicki Selkirk, MB

Dealer Contact

Lincoln - Olson Marketing

Don & Peg Olson ZO Referral# 4901 402-310-6414

http://om.shopamsoil.com lubedealerdon@gmail.com

Omaha - Insane Oil

Dr. Jonathan D. & Stacey L. Olson ZO Referral# 10458 402-990-7940 (text or call)

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