

Your Amsoil Information News Source

Product Highlight: DCT Fluid

Dual-clutch transmissions (DCTs) are automatic transmissions based on the architecture of manual transmissions. The complex system essentially consists of two manual transmissions in the same housing. As one clutch is engaged, the other readies the next appropriate gear, minimizing the interruption of power and improving performance and efficiency. A specially formulated fluid is required to maintain the high-performance output of these advanced transmissions. AM-SOIL 100% Synthetic DCT Fluid is designed to protect high-tech dual-clutch transmissions during the most intense, high-heat operating conditions. It provides the fast, smooth shifts drivers expect.

Excellent Friction Durability

Dual-clutch transmissions are capable of seamless, split-second shifts but can suffer from shudder or lurching at slow speeds. <u>AM-SOIL 100% Synthetic DCT Fluid</u> is engineered to prevent shudder in sophisticated dual-clutch transmissions. Its frictional properties provide superior protection and consistently produce fast, smooth shifts. <u>Synthetic DCT</u> Fluid's exceptional durability ensures stability in stop-and-go traffic. It promotes stable synchronizer engagements, extending the life of the transmission.

Outstanding Wear Protection

AMSOIL Synthetic DCT Fluid resists the extreme heat in today's high-temperature DCTs to provide complete protection for gears, bearings and other vital parts. Its high film strength and anti-wear/extreme-pressure additives are specifically designed to protect the metal surfaces of DCTs.

Congratulations:

New Preferred Customers

Raymond Hogrefe Lincoln, NE

> Jeff Martz Lincoln, NE

Ernest and Shirley Scheffert Lincoln, NE

New Catalog Customer

Steve Baker Louisville, NE

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Oil Analysis

Signature Series 5W-20 Synthetic Motor Oil New Oil Sample versus 2008 Hyundai Elantra with 12 months of service

	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
NL	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	13	0	0	6	1	0	0	0	1	0	16	10	2	0	112	0	0	0	27	12	2935	0	502	548
2	9	0	1	4	0	0	0	0	0	0	16	11	3	0	96	0	0	0	21	14	3070	0	518	528

The above chart is an oil analysis comparison for my wife's 2008 Hyundai Elantra.

Sample # NL is the baseline numbers for <u>Amsoil Signature Series</u> <u>5w-20 Syntehthic Motor Oil</u>.

Sample #1 is the oil analysis numbers taken in June 2015 with a lube time of 12 months and 9,200 miles.

Sample #2 is the oil analysis numbers taken this June 2016 with a lube time of 12 months and 10,000 miles.

The oil analysis revealed several areas of irregularity, Molybdenum (Moly) and Boron. Both of which fell under the category of Multi-Source Metals. These metals could be from contamination, wear, or additives (or a combination).

Moly is identified as being a wear metal and an additive metal. Given that the baseline oil sample had 152 ppm of Moly, I am assured that it is an additive in this case, rather than a wear metal. In fact, Moly is a friction modifier additive and anti-wear coating. In the engine, Moly is an insert on some piston rings and according to research is combined with chromium in steel to make the steel harder and more resistant to bending.

The level of Molybdenum was identified as being slightly abnormal by oil Analyzers. According to research, Moly, once put into suspension, will gradually settle out. This concept can be verified by looking at the numbers. Initially there is 152 ppm of Moly in the oil. In oil sample #1, for every 1000 miles that was driven the Moly dropped about 4 ppm. In oil sample #2, for every 1000 miles driven the Moly dropped about 6 ppm. Comparatively, in my truck oil sample #1 dropped 5 ppm per 1000 miles and oil sample #2 dropped 2 ppm per 1000 miles. From my understanding of the numbers, initially the Moly will stay in suspension, only loosing about 2 ppm for the first 6,000 miles. As you continue to drive and reach between 6,000 and 8,000 miles the ppm will drop at an approximate rate of 4-5 ppm. And as you near 10,000 miles the rate at which it will drop increases to 6+ ppm.

From my understanding, the longer you "use" your oil, the harder it is for the oil to "keep itself together". It kind of reminds me of growing older. The older you get the faster your body falls apart.

The other area of irregularity noted by Oil Analysis was Boron. If you read the newsletter from last month I explained about Boron, as my truck also had a slightly abnormal boron level.

Much in the same, since the Boron levels are reducing as the oil is being "used", it indicates that Boron is an additive rather than a contaminant from the coolant in the vehicle.

All in all, after assessing the results from the oil analysis, I can conclude that I have no concerns regarding the results from this portion of the oil analysis report. It is clear that after 12 months and 10,000 miles of service on this oil, based upon this portion of the oil analysis report, the oil is doing quite well and still has some life left in it.

Continued on next page ...

Oil Analysis...continued

-	12	Sampl	e Inforr	nation				S	Contaminants	Fluid Properties						
ample #	Date Sampled	Date Received	E Lube Time	E Unit Time	Lube Change	R Lube Added	Filter Change	Fuel Dilution Dilution	Soot Nov **	loo %	Q Viscosity 40°C	Q Viscosity 100 *C	Sta Acid Ba Number	Sta Base Number	aps/cm	mm mm 10/12
NL.	06-Apr-2016	08-Apr-2016	0	0	Unk	0	Unk			<.1 - FTIR		9.1		11.0	49	6
1	25-May-2015	10-jun-2015	9200	58000	Yes	0	Yes	<1 - Estimate	<.1	<.1 - FTIR		9.4		1.83	57	18
2	08-Jun-2016	14-jun-2016	10000	68000	Yes	0	Yes	<1 - Estimate	< 1	<.1 - FTIR		9.7		1.72	57	17

Taking a look at the physical characteristics and properties portion of the oil analysis for my wife's car, there are two areas that have been highlighted, viscosity at 100 degrees Celsius and Total Base Number.

These two areas of concern were also noted on the oil analysis for my 2001 Ford F150 that I discussed in last month's newsletter. In a nut shell, the Total Base Number gets smaller as the oil is "used" and it is evident that the oil in this sample is nearing the end of it's life. In theory, I could continue to run this same oil for approximately an additional 2,000 miles or 2 months before the TBN would be at zero.

These results also verify Amsoil's claims that their Signature Series oil can last for 12 months of service. The numbers actually show that I can technically extend my oil change service beyond 12 months. However, it is not recommended by myself or Amsoil. This goes to show that after 12 months of the same oil in my wife's vehicle, it is still protecting the engine, proving that Amsoil's Signature Series motor oil line can withstand extended drain intervals.

Oil Analysis Sampling Procedures



The Altrum Minute Why you may need a multivitamin.

No supplement or multivitamin can take the place of a nutrientdense, plant-rich diet with its fiber and full spectrum of nutrients.

Taking a well-designed multivitamin and mineral supplement can be an important contributor to good health, according to an article by Dr. Joel Fuhrman, published at www.abouthealth.com.

Few people are able to eat healthfully enough to get the ideal amount of every vitamin and mineral needed in optimal amounts. For example, iodine, zinc, vitamin B12, vitamin K2 and vitamin D3 are difficult to obtain in optimal levels through plant foods.

The best use of a good multivitamin is to protect against possible deficiencies, providing nutrients whose requirements are not met with food alone.

<u>A.J.'s Ultra Multi</u> is a great multivitamin that contains more than 14 supplements. It's formula is comprised of more than 130 vital ingredients that reflect the latest breakthroughs in nutritional science.

Shop Talk... with Jon Olson

Oil Analysis can be a very complicated topic. Over the last few months I dedicated much of the newsletter to discussing the topic of Oil Analysis; from reading the reports, to understanding the sampling procedure, to comparing a baseline sample with a "used" oil sample.

This process was a learning experience for me. I can't say that I was sceptical about Amsoil's claims that their oil will "last" for 12 months but I am the type of person that needs to see the proof.

If you have never had the opportunity to take Gallup's Strengths-Finder test, it is worth the \$15 to learn a little about your personality and why you do things the way you do.

One of my top five strengths is Analytical. Having the strength of Analytical is described by the following notion:

"Prove it. Show me why what you are claiming is true."

It is not that I want to destroy other people's ideas, but I insist that their theories and claims be sound. Moreover, I want to be the one to collect and analyze the data to ensure that the claims are accurate. It is too simple to ask someone to show me a chart. I need to collect the data, analyze it and make the chart myself. This most definitely applies to Amsoil as a company. I will be here to validate any product claim made by Amsoil. So far, they are doing a pretty darn good job.

Dealer's Zone

By Don Olson ZO#4901

Preferred Customer "special" for July 6-12 for some PC's with correct E-mail addresses on file: Those nearing the end of their 12-month membership were offered 18-month renewal for 12-month price!

More great offers coming! Ensure your correct E-mail address is on file with AMSOIL to be notified with these special offers. Not everybody gets them ... but you will be notified by E-mail when your turn comes!

Send your updated Email to: update@amsoil.com

Subject: P.C. Promos

Body: My account number is

Or call: 1-800-777-7094 (M-F, 7-7 CT).

Remember also that every order you make at AMSOIL is worth \$\$\$\$ off on future orders. \$1.00 for every \$50.00 in merchandise (cumulative). AND for every referral that registers and orders \$50.00 or more you will receive 500 Points (\$10.00). All referrals count; refer as many family, friends and acquaintances as you can.



Motorcycles and Rust

Motorcycles are prone to rust from storage, humidity and short drives. Rust can cause major damage such as roller bearing failure, uncontrolled wear, compression loss and blow-by. Good rust protection, however, comes by design and is not natural to engine oils. Unlike many motorcycle oils, AMSOIL Synthetic Motorcycle Oil contains special anti-rust agents.

Don, in Lincoln, carries the full line of Amsoil Synthethic Motorcycle Oil and Filters.

Jon, in Omaha, carries 20w-50 Amsoil Motorcycle Oil and the full line of Motorcycle Filters (including Chrome coated filters).

If you are in need of an oil change, give either Don or Jon a call and set up a time to stop buy and get your products today.

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Dealer's Corner

Helpful tip: In a diesel engine, black smoke is partially burnt fuel or soot, white smoke is unburnt fuel and blue smoke is most likely burnt engine oil.