



## Your oil-life monitoring system is not an on-board chemist.

Oil-life monitoring systems do not actually measure the properties of motor oil.

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Oil-life monitoring systems (OLMS) have become more common in the last decade. The goal of an OLMS is to increase engine oil drain intervals without risk to the key components the oil is lubricating, which is similar to one of the main goals of used-oil analysis. But that's where the similarities end – with the objective. Since most new cars come equipped with some type of OLMS that can directly contradict AMSOIL-warranted extended drain interval recommendations, I want to go over how the systems are designed, how they function and what you need to know when it comes to extending oil drain intervals.

Actually, oil-life monitor is a poor description for these systems. A better name would be oil life *estimator*. These systems do not monitor any direct physical or chemical property of used oil; they only accumulate operational data from the car's computer and attempt to predict how your driving habits have impacted the motor oil's viscosity, total base number (a measure of remaining detergency) and oxidation level. Since these key properties are not actually measured by an OLMS, how can it know when there's only 10 percent life left on an oil? It can't. An OLMS provides a gross estimate of oil life based on a mathematical model developed using a specific type of oil.

An OLMS takes no direct measurement of oil viscosity, which is critical in estimating oil life, nor does it measure TBN to gauge how much detergent is left to fight acidic combustion byproducts. There also is no on-board \$50,000 gauge to measure the oxidation level of the oil. If your OLMS actually monitored the properties of your oil, you would not be able to simply press a couple

buttons and reset your OLMS to 100 percent oil life. If you are from Missouri and need to test this fact, try it before your next oil change.

So is your OLMS useless? Not exactly. These systems are getting better and do a decent job of convincing drivers to extend oil drain intervals, helping to break the outdated and wasteful practice of changing oil every 3,000 miles. But an OLMS cannot tell the difference between a high-quality synthetic oil and a run-of-the-mill conventional oil.



The first oil monitors were mileage based and provided outdated mileage options such as 3,000 or 5,000 miles. Some cars are still equipped with these mileage-based indicators.

Algorithm-based monitoring systems are engineered with an understanding of how temperature and load affect oil integrity; extreme temperatures and engine load are known to shorten oil life. For example, the GM OLMS penalizes estimated oil life when the engine is driven in very cold conditions or when the engine is extremely hot.

GM claims most drivers will be able to achieve between 7,500- and 8,500-mile intervals; however, some drivers could see longer intervals if their driving conditions permit. GM says the GM OLMS automatically adjusts the interval based on engine characteristics, driving habits and climate. GM also claims

the use of synthetic oil does not extend drain intervals, but does acknowledge using synthetic motor oil may provide some benefits.

Many 2011 Ford/Lincoln/Mercury vehicles use an algorithm-based system called the Intelligent Oil-Life Monitor™ (IOLM). Ford claims the IOLM can provide oil drain intervals of up to 10,000 miles, depending on driving conditions. The Ford IOLM monitors driving conditions such as engine speed and load, oil and coolant temperature, hours of operation, hours of idle time and the cleaning cycle for diesel particulate filters, if equipped. Ford engines are tested using Motorcraft® synthetic-blend oils. The IOLM algorithm is entirely software-based, meaning it does not monitor the oil's direct chemical or physical quality. Other Ford vehicles are equipped with a system that does not gather operating data to calculate oil life; it simply signals an oil change is necessary every 10,000 miles or one year.

Despite the technological advances and sophistication of the newer on-board oil-monitoring systems, they are still a predictive model and cannot directly measure key used oil properties nor differentiate between a high-end synthetic motor oil and an entry-level conventional product. AMSOIL developed Signature Series Synthetic Motor Oil and confirmed its performance in field trials with used-oil analysis. We used vehicles from several different manufacturers and ran them in the harshest environments we could find; all so you can sleep well at night when your OLMS says you need an oil change and you don't plan on doing so until next spring.

P.S. See oil-life monitor re-set instructions in the AMSOIL Product Selection Guide (G50). ■