

AMSOIL[®]

MAGAZINE

►DISTRIBUTOR EDITION

OCTOBER 2020



MUSCLE CAR MANIA: VOL. 2

MOPAR MUSCLE

Go Before Show

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Performance matters.

Designed to perform.
Designed to protect.
Designed for your engine.

EUROPEAN MOTOR OIL FAMILY

0W-20 LS-VW (EZT):

Use in vehicles that require API SN-PLUS, SN... • ACEA C5 • VW 508.00/509.00

0W-20 LS (AFE):

Use in vehicles that require API SN-PLUS (Resource Conserving), SN, SM... • ILSAC GF-5 • ACEA C5 • A1/B1 • BMW LL-17FE+ • MB 229.71 • Ford WSS-M2C947-B1 • Opel/Vauxhall OV0401547 • Fiat 9.55535-GSX • Chrysler MS-12145 • Volvo VCC RBS0-2AE

0W-40 FS (EFO):

Use in vehicles that require ACEA A3/B3, A3/B4 • API SN/SM... • BMW LL-01 • MB 229.1/229.3/229.5 • Porsche A40 • Renault 0710, 0700 • VW/Audi 502.00/505.00

5W-30 LS (AEL):

Manufacturer Approvals: VW 504.00/507.00
Use in vehicles that require API SN • ACEA C3 • GM dexos2 • Chrysler MS-11106 • MB 229.51 • BMW LL-04 • Porsche C30

5W-40 MS (AFL):

Manufacturer Approvals: MB-Approval 229.51 • Porsche A40
Use in vehicles that require ACEA C3 • API SN/SM/CF... • BMW LL-04 • Chrysler MS-10850 (supersedes MS-10896) • Ford WSS-M2C917-A • GM dexos2 (supersedes LL-A-025 and LL-B-025) • Renault RN0700/RN0710 • VW/Audi 502.00/505.01

5W-40 FS (EFM):

Manufacturer Approvals: MB-Approval 229.5 • Porsche A40 • VW/Audi 502.00/505.00
Use in vehicles that require ACEA A3/B3, A3/B4 • API SN/SM... • BMW LL-01 • Renault 0710, 0700 • Opel GM LL-B-025



NEW

NEW

AMSOIL
100% SYNTHETIC
EUROPEAN MOTOR OIL LS-VW

Engineered For Vehicles Requiring
VW 508.00/509.00
SAE 0W-20
1 U.S. QUART • 946 mL

AMSOIL
100% SYNTHETIC
EUROPEAN MOTOR OIL AFE

Engineered For Vehicles Requiring
BMW LL-17FE+
MB 229.71
SAE 0W-20
1 U.S. QUART • 946 mL

AMSOIL
100% SYNTHETIC
EUROPEAN MOTOR OIL FS

Engineered For Vehicles Requiring
MB 229.1, 229.3, 229.5 • BMW LL-01
Porsche A40 • VW 502.00/505.00
SAE 0W-40

AMSOIL
100% SYNTHETIC
EUROPEAN MOTOR OIL LS

Engineered For Vehicles Requiring
MB 229.51 • BMW LL-04 • Porsche C30
VW 504.00/507.00
SAE 5W-30
1 U.S. QUART • 946 mL

AMSOIL
100% SYNTHETIC
EUROPEAN MOTOR OIL MS

Engineered For Vehicles Requiring
MB 229.51 • BMW LL-04 • Porsche A40
VW 502.00/505.01
SAE 5W-40

AMSOIL
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STAFF

- Editor**
Terry Johnsen
- Associate Editor**
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- Staff Writers**
John Baker
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Joel Youngman
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- Senior Graphic Designer**
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- Content Contribution**
Pam Brantley
Alex Thompson
- Editorial Contribution**
Eric Brandenburg
Mark Nyholm

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www.AMSOIL.com
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President & CEO

Alan Amatzio

Board Chair

Dean Alexander

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Letters to the Editor

AMSOIL INC.
Communications Department
The AMSOIL Building
925 Tower Ave.
Superior, WI 54880
letters@AMSOIL.com



THE COVER

This iconic duo was made famous on TV's "The Dukes of Hazzard." The pair featured on the cover was used on the popular show in its heyday.

LETTERS TO THE EDITOR

OIL COMPETITOR

I've been an AMSOIL Dealer for awhile. Early on I recognized the value of the products that AMSOIL made (the number of them has certainly grown over the years). Yes, they were more expensive than other products out in the marketplace. However, the other guys weren't even making the products that AMSOIL was, with the sole exception of Mobil 1.* When looking at the independent testing between AMSOIL products and the other brands in the marketplace, there simply was no comparison. Performance-wise, AMSOIL set the bar; the others weren't even close. AI and his company were the leaders. They invented the breed. The other guys could only try to play catch-up; such was the competitive advantage that AMSOIL had over the remainder of the field. Put that together with AI's integrity and decision and commitment to his Dealers – well, as they say, the rest is history. That was way back then – back in the day.

A lot has changed since then. There is an old saying – “A rising tide lifts ALL boats.” That was what AMSOIL did. You would be hard pressed today to find a manufacturer that didn't offer some sort of synthetic product.

I saw in *Costco Connection* magazine a little ditty about Kirkland* Signature Full Synthetic SAE 5W-30 oil. I would like to see independent product testing between comparable AMSOIL products and the Costco* products. It is important for AMSOIL as a company and their Dealers to keep up with changes in the marketplace, especially against such a worthy competitor as Costco, who has a great reputation for Kirkland product performance and pricing.

Respectfully submitted,

Dan Swehosky

AMSOIL: *You are right, Dan, a lot has changed in our industry over the years. Our position as the leader in motor oil performance and protection, however, has not changed. We still use test results to demonstrate the superiority of our products, and we publish them in our literature and on our website. To maximize the influence of our claims, we test against other well-known and popular brands, including Mobil 1, Valvoline* and Pennzoil.* While the Kirkland brand has*

a good reputation with Costco members, it is not widely distributed, nor is it widely known among automotive enthusiasts or recognized as a leader in the motor oil market. For those reasons it is unlikely that we will feature Kirkland Motor Oil in any of our published test results any time soon. Should Kirkland's position in the market improve, we will definitely reconsider. Thank you for your loyalty through the years.

BASE OILS

After years of telling us Group III base oil is not synthetic, now you tell us it is a synthesized material. You spent time on the Mobil* vs. Castrol* case, explaining how Group III is not synthetic. You posed your own question: what kind of base oil does AMSOIL use? You didn't answer it, only to say: at the end of the day, the type of base oil used to formulate the oil is inconsequential. Really? I'm disappointed, to say the least.

Chris Kinsey

AMSOIL: *Thank you for sharing your concern, Chris. When the National Advertising Division of the Better Business Bureau ruled that Group III base oils were classified as synthetic in 1999, we briefly chose to differentiate ourselves by highlighting our use of PAO, but we never stated that Group III oils*

were not synthetic. We knew better than to do that from experience. Originally (1972), we used esters exclusively to create our products because that was the only widely available synthetic base oil. When PAOs became readily available we converted in the 1980s, and we told Dealers that we were switching. That created quite a stir and some Dealers quit because they thought that equated to producing a lower-quality product. That sounds crazy today, but it's true.

Focusing on base oil type is a distraction from what matters most (product performance) and it limits our ability to adopt new technologies and adjust formulations. We experiment with all types of synthetic base oils and additives and we have learned how to maximize product performance using a variety of raw materials in varying combinations. Most competitive oils on the market are mono-based – they use only one type of base oil. Today, most of our products feature multiple base oil types. In the lab, we joke that our oils don't fall into the standard Groups I-V. AMSOIL is Group X. We look at base oils like additives, with each having a specific function. We build a strong foundation with inherent benefits, which helps explain why our oils are so good. Custom formulation is our area of expertise, and it isn't something every company does. This is one way we differentiate ourselves and therefore, we cannot divulge the type or types of synthetic base oils used in our formulations.

One thing you can be sure of, Chris: We make the best oils and we always will. How we are able to make that happen is our secret.

Email letters to:
letters@amsoil.com

Or, mail them to:
AMSOIL INC.
Communications Department
Attn: Letters
925 Tower Avenue
Superior, WI 54880

Letters are subject to editing for length and clarity; please include your name, address and phone number. Unsigned letters will not be published.



Mark Nyholm | TECHNICAL MANAGER, HEAVY DUTY AND MECHANICAL R&D

Down, but not out

Some said diesel would die in America. The data says otherwise.

Remember Dieselgate? Five years ago, the U.S. Environmental Protection Agency issued a notice to Volkswagen* that several of its 2009-2015 diesel-powered cars, including the popular Jetta* and Passat,* were in violation of the Clean Air Act. It turns out VW* had intentionally installed software in these vehicles designed to cheat emissions testing. While the engines passed testing in the lab, they emitted up to 40 times more nitrogen oxides than allowable on the road.

The fallout was immense. VW recalled millions of cars and was ordered to pay billions in damages to motorists across the globe. For diesel enthusiasts, the pool of potential vehicles that met their desires for great low-end torque, power and fuel economy shrunk as VW all but left the U.S. with its tail between its legs. And it wasn't just VW. Subsidiary companies Audi* and Porsche* also pulled back the reins and followed VW's lead.

At the time, some pundits predicted the death of diesel in America. But diesel enthusiasts have proven to be a loyal group. They aren't about to give up the advantages of diesel because a couple companies acted dishonestly.

With scrutiny trained on European diesel brands after Dieselgate, American automakers stepped in to fill the void. We're accustomed to seeing powerful turbodiesel engines under the hoods of American pickups. Ford* is famous for its Power Stroke* engine, Chevrolet* has the Duramax* and RAM* offers its Cummins.* What do all these engines have in common? They power big, three-quarter-ton and larger pickups with pavement-shredding torque and enough power to pull a ranch house down the freeway at 80 mph (129 km/h).

Another common trait, however, is their giant sticker prices. We're talking about trucks that can cost more than a starter house in some parts of the country. You can easily drop \$60,000 on one of these pickups, and quite a bit more once you add a few enticing options. Heck, in 2019, the fully loaded versions of all three major brands topped \$100,000 for the first time in history.

Many people don't have that kind of dough for a truck, but they still want the added power, torque and fuel economy of a diesel engine. Some, too, simply like the idea of owning something different that'll help them stand out from the gasoline-powered crowd.

All that adds up to a demand for diesel engines in smaller, half-ton pickups and other passenger vehicles. Enough motorists are willing to drop about \$5,000 for the diesel option in their vehicle to have convinced U.S. manufacturers to step in and fill a market traditionally dominated by European manufacturers.

The RAM EcoDiesel* engine, for example, has been around for six years. You can get one in your 2020 RAM 1500 pickup, and it'll return a reported 260 hp and 480 lb.-ft. of torque. Not bad for a "light-duty" truck. Not to be outdone, Ford introduced a 3.0L V-6 diesel option for the F-150* in 2018. And, of course, Chevy offers a Duramax in some of its vehicles. Jeep* lovers can also opt for diesel power in some Wrangler,* Comanche* and Cherokee* models.

These smaller diesel engines continue to gain followers. They usually offer about 3.0 liters of displacement, although the engine that powers recent models of the Cruze,* Equinox* and GMC* Terrain* checks in at just 1.6L. That's quite a bit smaller than the engines under the hoods of the full-size pickups. But don't

be fooled – these engines pack some powerful torque and they do so in a vehicle that rides considerably nicer than three-quarter-ton and larger trucks.

An estimated 200,000 smaller diesels are in operation in America now, which is 58 percent more than 2019. Even with coronavirus-slowed vehicle sales this year, we expect those numbers to increase. Many automakers ran deep discounts during the spring and summer, and millions of Americans received stimulus checks that I bet went toward at least a few new-vehicle purchases.

So, why am I telling you all this? For starters, as a diesel enthusiast, I'm always happy when other motorists discover the benefits of driving a diesel. And, as one who works each day to improve our portfolio of diesel products, this burgeoning diesel market offers great promise. Unfortunately, we don't have a product specifically tailored to smaller diesel vehicles yet. We currently recommend AMSOIL Synthetic European Motor Oil for some U.S. vehicles. While it's a great product, there's a disconnect in the customer's mind when we recommend a "European" oil for an American vehicle. Many other oil companies do the same thing.

I'm happy to say that we're about to change that. Look for a new addition to our diesel oil line soon specifically tailored to this growing market. It'll be labeled and marketed in the best way to help earn the trust and business of these drivers. And, of course, it'll provide industry-leading protection and performance. It wouldn't be an AMSOIL product if it didn't. So, get out to your local dealership and give one of these smaller diesel vehicles a test drive. You may have just found your next vehicle.



MUSCLE CAR MANIA: VOL. 2

Mopar Muscle – Go Before Show

Our Muscle Car Mania series highlights some of the most iconic muscle cars in history. Next in line: Mopar.*

Mopar muscle has been respected for decades in classic auto-enthusiast circles. The iconic cars have been reverently dubbed as “go before show” kind of vehicles – letting their engines do most of the talking and adding trim pieces, nose cones, wings and decals for style. While technically the parts division of Chrysler,* Mopar has shared powertrains across brands like Dodge* and Plymouth* to create numerous specialty classics like the Charger Daytona,* Coronet Super Bee,* Roadrunner Superbird,* AAR 'Cuda,* Scat Pack* and Rapid Transit System* editions.

THE SMALL BLOCKS

Many early Mopar models came equipped with a modest 318-cubic-inch V8, referred to as an LA engine in 1967. These lightweight engines were based upon Chrysler’s low-cost A-series engines. Although not considered the most powerful on the roster, the 318’s cast-iron crank and hydraulic lifters were robust and put out a reliable 230 hp.

Like many V8s in the 1970s, the 318 underwent significant changes and was detuned to run on lower-octane fuel and become more fuel efficient due to the shortages and regulations of the time. These changes continued into the next decade and, in 1985, the 318 received its first roller cam, making it no longer reliant on high-ZDDP motor oil. The Mopar 318 model enjoyed a long life until it was eventually discontinued in the early 2000s.

In 1968, Chrysler introduced a small-block engine built for performance: the Mopar 340. The 340-cubic-inch V8’s larger intake, valves and exhaust manifold, high-flow carburetor, forged-steel crank and high-performance heads together put out 275 hp in a four-barrel configuration, making it a dominating presence from the start. A few years later, the famous 340 “Six-Pack” was born, which featured three two-barrel carburetors and put out an even higher 290 hp. One of the most famous vehicles with this combination was the AAR 'Cuda.

THE BIG BLOCKS

For those who wanted big-block engine power, the 383 V8 B-series engine was the standard offering on the B platform of Mopar vehicles. The 383 came equipped with either a standard two-barrel carburetor with 305 hp or a Power Pack version with a high-performance cam, dual exhaust and a four-barrel carburetor that produced 330 hp. If you’re lucky, you might even come across a 383 with a cross ram intake – one of the unique engineering designs from Mopar. Although only offered for five years, the Mopar 383 saw an almost 20 percent drop in compression ratios and subsequent horsepower declines due to changing regulations before it was discontinued in 1971.

Mopar’s holy grail engine might be the 426 Hemi. Introduced as a race-only engine, Mopar accomplished the unimaginable in 1964 at the Daytona 500 by sweeping the top four spots with four 426 Hemi-powered vehicles. Such a feat even led NASCAR to modify some of its rules in order to level future playing



fields. It's no surprise with that sort of record that the 426 became one of the most sought-after classic cars under the Mopar brand. After dominating performances on the track, the Hemi 426 was released to the public in 1965 as a "street Hemi" and was reserved for Dodge and Plymouth models. It still maintained its impressive 425 hp and 490 lb.-ft. of torque even after its race modifications were removed.

Mopar Today

In 2006, the Mopar name started to make a comeback. Dodge relaunched its Charger* and Challenger* models with 5.7L Hemi V8 engines, and since then the two have seen countless special editions and power additions like the 6.4L 392 Apache,* the 6.2L SRT Hellcat* and the 6.2L Demon.*

More recently, Mopar has been working on development of the 426 Hemi Hellephant,* which pays homage to the classic 426 Hemi, but with an added supercharger to boost out a whopping 1,000 hp and 950 lb.-ft. of torque. While right now it's only a crate engine, we'll have to wait and see what Mopar has planned for its future.



Both 6.2L and 6.4L Mopar models require specialized 0W-40 motor oil. **AMSOIL Signature Series 0W-40 (AZF)** is the perfect match for these high-horsepower engines.

DOMINATOR® Octane Boost (AOB, COB) is an excellent lead substitute at the same treat rates in collector automobiles designed for leaded gasoline.

- Reduces engine knock
- Improves ignition and engine response
- Helps fuel burn cleaner
- Inhibits corrosion
- Recommended for racing use

UNDERSTANDING VISCOSITY – WHAT THE TESTS TELL YOU

Fluid viscosity, sometimes referred to as dynamic viscosity or absolute viscosity, is a fluid's resistance to flow, which is caused by a shearing stress within a flowing fluid and between a flowing fluid and its container.

Viscosity Classification

Some of the informal terms used to describe the viscosity of a relatively free-flowing fluid, such as water, include thin, light and low. Terms such as thick, heavy or high suggest a fluid with strong resistance to flow, such as honey.

However, these terms are general and difficult to measure. More specific classifications give us a better idea of how fluids move.

Temperature affects how a fluid moves. Imagine how the viscosity of honey would greatly increase at temperatures near freezing and decrease near boiling temperatures. To understand these different reactions, viscosity types are scientifically classified as kinematic viscosity or absolute viscosity.

Kinematic Viscosity

Kinematic viscosity describes a fluid's visible tendency to flow. Think of this as the time it takes to watch a fluid pour out of a container. This tendency to flow is expressed in units suggesting the volume of flow over time, called centistokes (cSt).

Kinematic Viscosity Test (ASTM D445)

Kinematic viscosity is commonly determined under high temperatures using the American Society for Testing and Materials (ASTM D445) Viscosity Test. This test uses a uniformly marked or calibrated tube called a viscometer and a heating bath. The temperature of the bath is set at either 104°F (40°C), which is typical for industrial lubricants such as hydraulic fluids, compressor oils or gear lubricants, or 212°F (100°C), which is typical for motor oils.

The test oil is placed in a viscometer and heated by the bath to the specified stable temperature.

When the specified temperature is reached, the oil is drawn into a wider area within the viscometer, which is identified by upper and lower marks, and allowed to drain out. The elapsed time can be directly converted into centistokes (cSt). To be relevant, the cSt number must be reported along with the temperature at which it was determined.

When comparing fluid viscosities, the fluids being compared must be tested at the same time and at constant temperatures, or the comparison is invalid.

Although centistokes are the most common unit of measurement when determining kinematic viscosity, results also may be reported in units known as Saybolt Universal Seconds (SUS or SSU).

Even though identical test temperatures may have been used to determine the oil's viscosity in both centistokes and Saybolt Universal Seconds, the two should never be compared at face value because they are different units of measure. To do so would be similar to comparing distances in miles and kilometers. Viscosity reported in SUS is becoming increasingly rare.

Absolute/Dynamic Viscosity

Absolute viscosity, or dynamic viscosity, is a fluid's resistance to flow. Think of this as the energy required to move an object through a fluid. It takes little energy to stir water with a spoon; however, stirring honey with the same



Viscometer device used to determine a liquid's absolute or kinematic viscosity.

spoon requires significantly more energy. Absolute or dynamic viscosity is generally expressed in units known as centipoise (cP). As with cSt and SUS units, the higher the number of cP units assigned to a fluid, the greater its viscosity.

Brookfield Viscosity Test for Cold Temperatures (ASTM D2983)

The Brookfield Viscosity Test is used to determine the internal fluid friction

of a drivetrain lubricant at cold temperatures. A fluid sample is cooled in a liquid bath at -40°F (-40°C) for 16 hours. The sample is then evaluated, and the force required to move an object through the oil is recorded and converted to centipoise.

Lower cold-temperature viscosities (lower cP numbers) reported with this test indicate improved performance at cold temperatures.

Cold Crank Simulator Test for “W” Oils (ASTM D5293)

The Cold Crank Simulator (CCS) Viscosity Test is used to determine the internal fluid friction in motor oils with a “W” grade designation. This test is calculated in cP units as well, and measures the amount of energy required to overcome the resistance present in a lubricant that has been collected at temperatures from 23°F (-5°C) to as low as -31°F (-35°C), depending upon the anticipated SAE “W” classification of the oil being tested. Performance requirements to meet SAE “W” grades are outlined in the SAE J-300 engine oil viscosity classifications.

The CCS Viscosity Test simulates an engine’s ability to turn over at cold temperatures. Gauges monitor rotations per minute (rpm), amperage draw and motor input. A universal motor is run at a constant voltage to drive a rotor, which is closely fitted inside a stator and immersed in the test oil.

The viscosity of the oil at the given test temperature determines the speed of the rotor and amperage draw; thicker oil results in slower speed and more amperage drawn. Speed and amperage drawn are then converted to centipoise.

Like the Brookfield Viscosity Test, CCS results showing a lower cP number indicate lower viscosity. Oils that are thicker at low temperatures (high cP number) tend to exhibit more resistance and require more energy to pump and circulate and display a higher cP number on the CSS test. A higher cP number at a given temperature is directly correlated to a greater amount of energy required to turn an engine over, and it also

indicates a greater potential for starting difficulties. Most importantly, CCS results suggest a lubricant’s ability to be circulated at a given temperature and its ability to provide wear protection.

Viscosity Index

The viscosity index (VI) of a lubricating fluid refers to how much the viscosity of the fluid changes due to temperature. A high VI indicates the fluid undergoes little viscosity change due to temperature fluctuations, while a low VI indicates a relatively large amount of viscosity change.

Fluids with a high VI provide more protection to critical components over a wide range of temperatures by maintaining fluid thickness and the necessary fluid barrier between parts.

Viscosity Index Test (ASTM D2270)

The Viscosity Index Test (ASTM D2270) is based on the kinematic viscosity of the fluid at 104°F (40°C) and 212°F (100°C). Fluids whose viscosities do not change much between these two temperatures will have higher viscosity indices than those whose viscosity changes are greater. Viscosity index numbers above 95 are considered high.

AMSOIL Advantage

Thermal Stability

AMSOIL synthetic base oils have better thermal stability than mineral oils. Thermal stability permits the oils to be used longer, even as speeds and temperatures increase. It also allows oils to retain their viscosities at low temperatures. Lower-viscosity oil provides better cold-weather operation, allowing the oil to be quickly circulated at cold-temperature startups and supply engine components with the proper lubrication to keep them protected.

High Viscosity Index

AMSOIL lubricants are formulated to have naturally high viscosity indices, so the need for viscosity index improvers is reduced. The VI improvers used in AMSOIL lubricants are temperature specific, meaning they are activated only when certain temperature requirements are met. In most cases, VI improvers help maintain thickness at higher temperatures while having minimal effect at low temperatures. By using viscosity improvers with a high shear-stability index, AMSOIL is able to achieve optimal cold-weather performance with virtually no loss to shear-stability performance.

AMSOIL lubricants resist thinning at high temperatures (high VI) and can suppress the generation of additional friction and heat generated by components in contact due to a thinning lubricant.



Kinematic viscosity is a fluid’s visible tendency to flow; water has a lower kinematic viscosity than honey, meaning it flows faster.



CUT THE CHATTER

AMSOIL synthetic gear lubes and Slip Lock® Differential Additive provide outstanding protection while eliminating chatter in limited-slip differentials.

Limited-slip differentials commonly use clutches to transmit torque between wheels. When both wheels have ample traction, the clutch plates bind together tightly, but smoothly slip enough to allow chatter-free turning. When one wheel spins on a patch of ice or mud, however, additional power is sent to the other wheel through the clutch pack. This is where the gear lubricant's frictional properties play an important role in performance and wear.

Clutch Chatter

Differential manufacturers use different spring pressures and clutch disks made with different materials and surface areas. Additionally, spring tension and clutch friction properties change with age and wear, while the frictional requirements of the gear lubricant can vary. If the frictional properties are not correct, abnormal clutch engagement and disengagement – called chatter – can occur.

Chatter occurs when the clutches repeatedly alternate between slipping and sticking instead of smoothly slipping. It not only generates annoying noise and vibration, it causes premature wear.

Instead of formulating multiple gear lubes of the same viscosity, but different frictional properties, to address occasional chatter in limited-slip differentials, gear-lube friction-modifier additives can be used to alter the fluid's original frictional properties and eliminate chatter.

Should I use a friction-modifier additive with AMSOIL synthetic gear lube?

AMSOIL synthetic gear lubes are limited-slip capable and do not typically require an additional friction-modifier additive. However, depending on the differential's friction material and degree of clutch wear, chatter can still sometimes occur. The addition of AMSOIL Slip Lock® (ADA) will eliminate chatter in mechanically sound differentials.



AMSOIL SEVERE GEAR® Synthetic Gear Lube

SEVERE GEAR Synthetic Gear Lube excels in protecting gears and bearings from the rigors of severe-service operation. By design, it resists breakdown from high heat, preventing acid-caused viscosity changes and loss of gear protection. Its wax-free construction also improves cold-flow properties, improving fuel economy and cold-weather performance.

AMSOIL Slip Lock®

Slip Lock is formulated with advanced friction modifiers and is designed to eliminate gear-housing chatter in cars, trucks and SUVs equipped with clutch-type limited-slip differentials. It is formulated for use with both synthetic and petroleum gear lubricants and safely replaces manufacturer-recommended friction modifiers. Its convenient squeeze-tube packaging provides quick and easy application to the gear housing.



TARGET: DELIVERY FLEETS

Delivery fleets have taken center stage. People rely on mail carriers, truck drivers, package-delivery services, food-delivery drivers and more to fulfill their needs and keep their homes and businesses stocked, and the COVID-19 pandemic brought their importance to the forefront.

Fleet Challenges

Delivery fleet managers are constantly challenged to find ways to maintain, or even lower, their operating costs, even as equipment, parts and fuel expenses continually rise. It's especially challenging considering the extreme operating conditions fleet vehicles endure. Idle time, short trips, towing and hauling take their toll on conventional lubricants, reducing their ability to provide adequate protection of critical components and leading to expensive repairs and downtime that seriously hinder cost-reduction efforts.

AMSOIL Solutions

AMSOIL synthetic lubricants incorporate advanced synthetic technology and additive chemistry designed to provide unmatched protection and performance in the extreme conditions encountered by fleet vehicles, while supporting fleet managers' efforts to reduce costs and control unexpected repairs and downtime.

Reduced Downtime and Longer-Lasting Equipment

AMSOIL synthetic lubricants help reduce wear, inhibit deposit and sludge formation and lower operating temperatures, even in severe service. The superior protection they provide translates into cost savings as

vehicles last longer, require less maintenance and repair, and spend more time on the road (and less time in the shop).

Fuel Efficiency

Synthetic lubricants can provide increased fuel economy compared to conventional lubricants. Many AMSOIL customers have reported substantial fuel economy benefits after installing AMSOIL synthetic motor oil, transmission fluid and gear lube throughout their vehicles.

Extended Drain Intervals

AMSOIL coined the phrase "extended drain interval" in 1972. Many oil companies have since introduced synthetic motor oils of their own recommended for use beyond 3,000 miles. Original equipment manufacturers (OEMs) have also been raising recommended oil drain intervals, some up to 15,000 miles or higher when stated by an oil life monitoring system. AMSOIL offers lubricants that safely extend drain intervals even further for greater savings.



AMSOIL Synthetic Motor Oils

AMSOIL synthetic motor oils are formulated to provide superior protection and performance in fleet vehicles frequently operated in severe-service conditions, effectively extending engine life and reducing repairs and downtime.

Signature Series Synthetic Motor Oil offers guaranteed protection for up to 25,000 miles or 1 year, whichever comes first.

XL Synthetic Motor Oil offers extra protection for up to 12,000 miles or 1 year, whichever comes first.

OE Synthetic Motor Oil is specially formulated for the longer drain intervals recommended by OEMs.

AMSOIL Synthetic Diesel Oils

AMSOIL synthetic diesel oils reduce friction and provide excellent wear protection in hard-working, hot-running diesel engines. They effectively reduce operating temperatures, helping engines operate efficiently and last longer, while controlling soot and resisting harmful sludge and deposits.



Signature Series Max-Duty Synthetic Diesel Oil delivers 6X more engine protection.¹

Heavy-Duty Synthetic Diesel Oil delivers 4X more engine protection.²

AMSOIL Oil Filters

AMSOIL Oil Filters effectively trap and hold 99 percent of particles 20 microns and larger. Used with AMSOIL synthetic motor oils, AMSOIL Oil Filters provide a maximum recommended service life of either 15,000 miles/one year or 25,000 miles/one year, depending on the application.



DRIVETRAIN FLUIDS

The drivetrains in hard-working fleet vehicles can get extremely hot, shortening both lubricant and equipment life. Repairs and replacements are expensive, and vehicle downtime further cuts into the bottom line. AMSOIL synthetic drivetrain lubricants are formulated for the most-demanding conditions, reducing heat and extending drivetrain life.



Signature Series Synthetic Automatic Transmission Fluid

Signature Series Synthetic Automatic Transmission Fluid (ATF, ATL) is formulated to provide the high level of reserve protection required by fleet vehicles operating in severe operating conditions. Guaranteed for twice the OEM recommendation for severe service, transmissions continue to receive superior protection even when fluid changes are delayed.



SEVERE GEAR® Synthetic Gear Lube

SEVERE GEAR® Synthetic Gear Lube is formulated specifically to provide long gear, bearing and seal life in differentials used in severe operating conditions. It delivers 20% more cold-temperature protection than required by ASTM D2983.

FUEL ADDITIVES P.i.®

P.i.® (API) helps maintain peak engine efficiency, fuel economy, power and driveability in newer low-mileage gasoline engines. In engines with accumulated deposits, P.i. provides improved fuel economy up to 5.7 percent, reduced emissions, restored power and performance, reduced need for higher-octane fuel, reduced carbon rap and preignition, better driveability and smoother operation after only one tank of gasoline.



Diesel All-In-One

Diesel All-In-One (ADB) combines the superior detergency and improved lubricity of Diesel Injector Clean (ADF), the excellent cold-flow and anti-gelling properties of Diesel Cold Flow (ADD) and the increased horsepower and cetane of Diesel Cetane Boost (ACB) in one convenient package. It protects against injector wear better than Sea Foam*, delivering 2X more diesel fuel lubricity.³



¹than required by the Detroit Diesel DD13 Scuffing Test for Specification DFS 93K222 using 5W-30 as worst-case representation.

²than required by the Detroit Diesel DD13 Scuffing Test for Specification DFS 93K222 using 10W-30 as worst-case representation.

³Based upon independent testing of AMSOIL All-In-One obtained Nov. 8, 2018 and Sea Foam Motor Treatment purchased on Oct. 25, 2018 in the ASTM D6079 test.



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PREPARE FOR WINTER STORAGE

Fall is here, and it is time to begin preparing summer equipment for offseason storage. **AMSOIL Engine Fogging Oil (FOG)** and **Gasoline Stabilizer (AST)** provide outstanding protection through the winter months, ensuring equipment remains in prime condition and is ready for action in the spring.

Engine Fogging Oil provides stored equipment with long-term protection against corrosion and dry starts, extending engine life and reducing operating expenses.

Gasoline Stabilizer is formulated to keep fuel from deteriorating during storage. It reduces the oxidation process to help prevent varnish and gum buildup in gasoline, which can clog injectors, stick floats and cause poor engine performance.

Make your life easier next spring by properly preparing your seasonal equipment for winter storage this fall.