



SynMax Performance Lubricants

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Q & A TECHNICAL BULLETIN – GEAR LUBE PERFORMANCE & APPLICATIONS

Q: Gear Oil SAE weight selection what is the best choice for my differential?

A: Always stay with the original OEM for what is correct for the specifications, Standard Rule for differential is Up to 799 Torque Foot Lbs SAE 75W90, 800+ Torque Foot Lbs. SAE 75W140

Q: I want reduced friction for better rolling resistance, can I use a NASCAR W80 speedway oil?

A: Remember: NASCAR drive trains are specifically designed to the application – if the machined tolerance levels are designed for SAE 75W90 – then using a SAE W80 will not provide the required film strength where the ring and pinion “crushes together” within the gear contact area.

Q: If the OEM recommended gear lube is SAE75W90 can I use a SAE 75W110?

A: Always stay with the original OEM for what is correct for the specifications. The thought would be W110 is better than W90 because it is a thicker viscosity. W110 is specifically designed for modern differentials that are machined for W90. If you use a W110 where a W90 is OEM recommended, that extra W20 viscosity will increase friction and rolling resistance (synthetic or not) – simple fact.

Q: What is a EP Gear Lube are Gear Lubes made all the same?

A: No, all gear lubes are not made the same. EP means “Extreme Pressure” – this is a sulfate type additive which becomes chemically active at 140F. The “EP” additive provides a super anti-wear barrier between the gear face surfaces – especially for the worm gear design of the ring and pinion within differential. If the Gear lube does not have this additive package (most gear lubes do not) will increase in friction, run hotter, wear quicker and promote component failure.

Q: What is a Manual Transmission Fluid (MTF) and why is it different than Gear Lube?

A: Manual Transmission Fluid (MTF) is a heavy duty synchromesh FLUID, similar to the same type product used in transaxles and modern over the road truck and commercial transmissions (SAE 50) of 1000 in Torque. Synchromesh fluid is designed for planetary gears and to get into the tightest places within the transmission components. Gear Lubes will “bind” within the modern design transmission gears creating friction and resistance.

Q: Is there a lighter version of the Manual Transmission Fluid (MTF).

A: Manual Transmission Fluid (MTF) also comes in a lighter weight (SAE 30) for everyday horsepower applications. This can be used for most short track or racing applications 450HP or less such as short track racing “crate” motors. SAE 30 MTF can also be used in most modern automotive and transaxle applications.



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Q: what is the cross reference difference between SAE Gear Lube & SAE Synchronmesh weights?

A: Even they both say SAE (Society of Automotive Engineers) on the measurement scale, the working weights are pretty close as follows: SAE 30 synchronmesh is close to SAE W80 gear lube, SAE 50 synchronmesh is close to W90 gear lube.

Q: I have been using 80W90 gear lube in my older design transmission – should I change to MTF?

A: Always stay with the original OEM for what is correct for the specification. Remember older design transmissions used 80W90 gear lube because they were engineered and designed for that type oil.

Q: Can I use Manual Transmission Fluid (MTF) in my ring and pinion differential?

A: No, Ring and Pinion is called a “worm gear” design. The “crushing effect” upon those gear surfaces requires EP Gear Lube. MTF would not work properly and cause premature component failure in a ring and pinion differential. Always stay with the original OEM for what is correct for the specification.

Q: what happens when the oil gets to hot?

A: when the oil reaches a certain temperature (especially the lighter weight oils), you loose hydrodynamic film strength. When you loose hydrodynamic film strength (oil barrier) parts increase in friction. When parts increase in friction – this slows the engine performance, looses horsepower and torque since the motor is now fighting itself to do the same job. That is why you need to select the right oil to perform in real race conditions through out the entire race session (including last laps) not just the beginning. Remember: you need to first finish before you finish first. In professional race applications – the difference in 10 - 20 degrees of oil temperature (230F vs. 240F) in race conditions reduces horse power performance 5 to 15 horsepower depending on the situation.

Q: Will cooler oil temperatures help the oil last longer?

A: Yes, this is a natural and chemical fact: once you get above 100C (180F), every 10C (20F) you can reduce the oil temperature; you will double the life durability of the oil (not including contaminate factors).

Q: Should I Break-In my Transmission or Differential just like a motor before competition use?

A: Yes, Titan has a special designed Break-In Gear Lube for that application to help mate parts together and cleanse damaging particles.

For further information please reference the following SynMax Technical Bulletins:

API Questions: Race Oil vs. Street Oil
Q & A Race Oil General Applications
Racing Products Application Guide

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