



TECHNICAL DATA

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2937590 SUPREME SYNTHETIC PLUS GEAR LUBRICANT

SAE 75W-90

Supreme Synthetic Plus Gear Lubricant SAE 75W-90 is a para-synthetic, shear stable, thermally stable and durable, multi-grade gear lubricant that is recommended for use in all types of automotive gear drive applications that require a gear oil to operate under severe wide ambient temperature ranges.

Supreme Synthetic Plus Gear Lubricant SAE 75W-90 is blended from the finest quality severely hydrotreated polyalphaolefin (PAO) synthetic base fluids and severely solvent refined, severely hydro-finished high viscosity index 100% pure paraffin base oils available. This unique combination provides Supreme Synthetic Plus Gear Lube SAE 75W-90 with the following advantages:

1. **Excellent low temperature properties. This results in the bearings and gears being instantly lubricated at sub-zero temperatures the moment they start turning.**
2. **Superior oxidation stability.**
3. **Excellent resistance to thermal degradation**
4. **Excellent hydrolytic and demulsibility characteristics**
5. **Low coefficients of traction, which result in fuel economy benefits.**
6. **A high viscosity index**
7. **Increased wear protection and longer gear life**
8. **Compatibility with all types of seals.**

Blended into these para-synthetic base oils is a highly specialized proprietary non-corrosive thermally stable and thermally durable multifunctional extreme pressure additive package that provides the Supreme Synthetic Plus Gear Lubricant SAE 75W-90 with the following advantages:

1. **Enhanced thermal and oxidative stability and durability to handle operating temperatures of 300°F to 350°F.**
2. **Excellent extreme pressure properties to protect the gears and bearings from excessive wear and fatigue.**
3. **Prevention of the formation of sludge and carbon deposits that erode the seals.**
4. **Excellent seal compatibility.**
5. **Enhanced protection of copper, brass and bronze components from corrosion.**
6. **Non-corrosivity to brass, bronze and other non-ferrous metal parts.**
7. **Excellent protection of components from rust and corrosion in dry conditions and in the presence of moisture.**
8. **Excellent resistance to water and moisture.**
9. **Excellent water separability characteristics.**
10. **Enhanced gear, bearing and seal cleanliness**
11. **Excellent resistance to foaming.**

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Supreme Synthetic Plus Gear Lube SAE 75W-90 contains an extremely shear stable polymer type viscosity index improver. This extremely shear stable polymer-type viscosity index improver provides the Supreme Synthetic Plus Gear Lube SAE75W-90 with a high viscosity index. These polymers expand as temperature rises and contract as the temperature is lowered allowing the Supreme Synthetic Plus Gear Lube SAE75W-90 to exhibit low temperature properties that allow the gears and bearings to be safely started at low ambient temperatures and to have the proper viscosity needed at operating temperature and high ambient temperatures in order to minimize wear. This temperature selectiveness also enhances the Supreme Synthetic Plus Gear Lube SAE 75W-90's high temperature oxidation stability.

The trend among automotive gear drive manufacturers is to operate the equipment at higher speeds, loads, power densities and increased torque. These trends have resulted in automotive drives being subjected to higher operating temperatures. These higher operating temperatures have resulted in today's gear lubricants being subjected to extreme thermal stress.

Therefore, it is important that a gear lubricant possess thermal stability and durability characteristics. Gear lubricants that do not possess these properties rapidly oxidize and decompose when subjected to high temperatures, resulting in the formation of sludge, varnish and carbon deposits on the gears, bearings and seals, abraded seals, premature seal hardening and brittleness, and a loss of the gear lubricant's extreme pressure additive chemistries ability to protect against excessive wear, spalling and overall distress to the gears and bearings.

Supreme Synthetic Plus Gear Lube SAE 75W-90's para-synthetic base oils and thermally stable and thermally durable multifunctional extreme pressure additive package enables Supreme Synthetic Plus Gear Lube SAE 75W-90 to resist oxidation and thermal stress at operating temperatures 150°F to 175°F higher than conventional gear lubricants. This results in:

1. **A vast reduction in the formation of deposits.**
2. **Better heat transfer**
3. **Excellent protection to the gears and bearings even under the most extreme thermally stressed operating conditions.**
4. **Less wear to gears, bearings and seals.**
5. **Increased oil seal life.**
6. **Lower operating temperatures**
7. **Less energy consumption**
8. **Longer lubricant life**
9. **Less equipment downtime**
10. **Longer equipment life**
11. **Reduced maintenance costs**

Most gearing is designed to perform under hydrodynamic lubrication conditions. That is, a full fluid film must separate the metal surfaces of the gears and bearings during operation. However, during periods of cold start up, extremely high operating temperatures or high shock loading conditions this full fluid film can be destroyed. Unless a boundary lubricant is present in the gear lubricant when this full fluid film is destroyed, wear can take place.

Supreme Synthetic Plus Gear Lube SAE 75W-90 contains a proven friction reducer and boundary called Micron Moly®. Micron Moly® is a liquid soluble type moly that plates itself to the metal surfaces of the gears and bearings. Once plated, Micron Moly® forms an indestructible long lasting solid lubricant film that is capable of withstanding pressures up to 500,000 psi. This solid lubricant film once plated to the gears and bearings will reduce friction, vibration and wear, thus extending equipment life.

Micron Moly® also provides a smooth finished surface on all moving parts of the gear drives. This smooth finish minimizes the action of cold welding and vibration, which can occur during start up after the gears have been standing idle and during periods of high shock loading.. This in turn lessens starting loads and peak power demand; thus, resulting in a realistic fuel economy cost savings.

Supreme Synthetic Plus Gear Lube SAE 75W-90 contains the proper additive system that allows the product to properly function and lubricate limited slip, positraction and high offset hypoid gear rear ends and differentials.

Supreme Synthetic Plus Gear Lube SAE 75W-90 meets and exceeds the following specifications: API Service Classifications GL-5, MT-1, PG-2; Military Specification MIL-PRF-2105E, SAE J2360, Mack GO-J, Clark MS-8 Rev. 1, Ford M2C-119A, M2C-197-A, MC2108C, M2C158A General Motors Specifications 9985476, 9985044, Chrysler MS8987 and MB 235.7, Mack GO-J and GO-J Plus; John Deere J11D, Komatsu Dresser B22-0003, B22-0005, Meritor/Rockwell Standard 0-76E, David Brown ET-19, Terex EMS 19003, VME America's EEMS S19003F, EEMS19107, Eaton's Axle Lubricant Specifications, Dana-Spicer Axle Lubricant Specifications, White Motor MS0016, Volvo, Volkswagen.

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TYPICAL PROPERTIES

SAE Grade	75W-90
Specific Gravity 60°F/15°C	0.875
Viscosity at 40°C Cst (ASTM D-445)	90-115
Viscosity at 100°C Cst (ASTM D-445)	13.5-16.00
Brookfield Viscosity (ASTM D-2983) @ -40°F/-40°C, cP	<130,000
Viscosity Index (ASTM D-2270)	150
Flash Point °F/°C (ASTM D-92)*	450°/232°
Fire Point °F/°C (ASTM D-92)*	490°/254°
Pour Point °F/°C (ASTM D-97)	-45°/-49°
Copper Strip Test, 3hrs. (ASTM D-130)	1a
Rust Test (ASTM D-665)	
Procedure A (Distilled Water)	Pass
Procedure B (Salt Water)	Pass
Four Ball EP Test (ASTM D-2783)	
Weld Point, kg.	315
Load Wear Index, kg.	55
Four Ball Wear Test (ASTM D-4172)	
Scar Diameter, mm	.25
Timken EP Test (ASTM D-2782)	
OK load, lbs.	65
Failure Load, lbs.	70
F Z G (Four Sequence Gear Test (ASTM D-5182, A/8.3/90)	13 th Stage
Falex Continuous Load (ASTM D-3233) Procedure A	
Failure Load, lbs.	2500
Oxidation Test (ASTM D-2893)	3%
% Viscosity Increase after 312 hrs. at 95°C	
Demulsibility Test (ASTM D-2711)	
Total Free Water, ml	81
% Water in Oil	1
Emulsion, ml	Trace
Foam Tendency (ASTM D-892)	
Sequence I 75°F, ml	0/0
Sequence II 200°F, ml	10/0
Sequence III 75°F, ml	0/0
L-60-1 Thermal Oxidation Test (ASTM D-5704)	
% Viscosity Increase	22

Packaging: #293 Supreme Synthetic Plus Gear Lube SAE 75W-90 is available in 420 lb. Drums, 225 lb. drums, 120 lb. Kegs, 40 lb. Pails and 12-1 quarts per case.