SINCE 1839
Schaeffer's
SPECIALIZED LUBRICANTS

TECHNICAL DATA

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ISO 9001 CERTIFIED

239S SUPER LUBE SUPREME
SAE 10, 30, 50 AND 60

Super Lube Supreme is a premium high performance parasynthetic, fluid that is specially formulated to provide superior protection and performance in powershift and direct drive transmissions, torque, differentials and final drives, wet brakes, drive axles, transfer drives, hydrostatic and hydraulic applications as well as machines with combined systems found in Caterpillar and other OEM front end loaders, haul trucks, dozers and other heavy duty off-road equipment used in the construction, mining, forestry industries and other off-road applications. Super Lube Supreme is specially formulated and engineered to provide improved performance and component life for those systems requiring Caterpillar TO-4 and FD-1 (SAE 60 only) specification, Allison C-4 or similar fluids. Super Lube Supreme provide optimized and balanced friction control performance, wear protection, materials compatibility thermal and oxidation stability, and shear stability along with protection against foaming and rust and corrosion.

Super Lube Supreme is blended from the finest severely hydro-treated polyalphaolefin synthetic base fluids and severely solvent refined, severely hydro-finished 100% pure paraffin base oils available. This unique combination provides Super Lube Supreme with superior oxidation, excellent film strength, excellent thermal and oxidation stability, excellent resistance to thermal degradation and lower volatility characteristics.

Blended into these para-synthetic base fluids is a very specialized non-corrosive high performance additive system that provides excellent wear protection and material compatibility while maximizing equipment life. This specialized high tech additive package allows the Super Lube Supreme to provide the following performance benefits:

- Balanced and controlled static and dynamic friction performance to provide optimized clutch friction retention and slippage control. This results in the elimination of problems with excessive brake noise and weakening of friction binders thereby assisting in longer trouble free equipment life.
- Elimination of clutch slippage even under heavy loads on an incline.
- Elimination of the need to constantly adjust equipment in order to maintain a proper clutch setting
- Efficient transmission clutch operation and optimum torque transfer.
- Increased transmission clutch life
- Increased machine breakout force
- Prevention of clutch chatter
- Excellent oxidative and thermal stability in order to prevent and eliminate the formation of sludge and varnish that can damage seals and elastomeric clutch materials.
- Excellent wear protection for gears, bearings and friction materials.
- Excellent compatibility with all types of seal and elastomeric materials commonly used in power-shift transmissions.
- Excellent stay-in-grade performance and shear stability in order to provide long term anti-wear protection and sustained applied pressure. Super Lube Supreme does not contain viscosity index improvers.
- Superior protection against copper corrosion and rusting of ferrous metal parts.
- Very good low temperature fluidity in order to provide easier cold weather starting and better wear protection under low temperature operating conditions.
- Excellent hydraulic protection provides superior anti-wear protection to high pressure systems.
- Excellent protection against foaming even with water contamination. This ensures that no air can become entrained into the fluid that could lead to metal-to-metal contact and wear.

- Maximum equipment reliability and productivity
- Longer drain intervals.
- Longer equipment life and reduced risk of premature component failure.
- Less downtime and longer trouble-free equipment life and operation.

Further blended into the para-synthetic base oils and the highly specialized additive package is Micron Moly®. Micron Moly® is a liquid soluble type of moly that plated itself to the metal surfaces of the various components, thus forming a solid lubricant film that is able to withstand pressures up to 500,000 lbs. per square inch. This translates into better wear protection for the metallic components of the power-shift transmission and for the hydraulic system, thus extending operating life and providing an extra margin of safety for service.

Super Lube Supreme can also be used in off-highway Allison and Twin Disc transmissions that call for a C-4 type fluid (SAE 10 and 30 only), Eaton-RoadRanger, and Meritor transmissions and most hydraulic systems of front end loaders, haul trucks, bulldozers and other crawler tractor type equipment that are common to the construction, mining and forestry industries. The SAE 60 viscosity grade also meets the requirements for those wheel drive axle, differential and final drive applications that specify a fluid that meets Caterpillar's FD-1 specification.

Super Lube Supreme meets and exceeds the following specifications: API Service Classifications GL-1, GL-2, and GL-3; Caterpillar TO-4; Caterpillar FD-1 (SAE 60 only);Allison C-4; Komatsu KES 07.802; Komatsu KES 07.868.1; Komatsu-Dresser; ZF TE-ML 03C; ZF TE-ML07F; Tremec TTC; Terex Construction Equipment; Euclid Equipment; Eaton-RoadRanger Transmission Lubrication Specifications (2015 and older, SAE 50 only); Dana Powershift Transmission Specifications (SAE 10 and 30 only); Meritor Transmission Lubrication Specifications (SAE 50 only); Vickers M2950S and Vickers 35VQ25 .

CAUTION: This oil is specially formulated for use in power-shift transmissions. Do not use in diesel engines. Shortened engine life could result due to heavy piston deposits.

Super Lube Supreme is not recommended for farm tractor equipment that employs a common reservoir for transmission and hydraulic systems or those Allison Transmission on-highway applications that specify the use of a fluid that meets TES 295® or TES 389™ specifications.

TYPICAL PROPERTIES

SAE Grade	**10**	**30**	**50**	**60**
Specific Gravity	0.8648	0.8748	0.8848	0.89
Viscosity@ 40°C, cSt (ASTM D445)	34.39-38.75	82.89-106.31	199.64-218.31	295 – 320
Viscosity@ 100°C, cSt (ASTM D445)	6.0-6.50	10.5-12.5	16.5-19.0	24 - 27
Viscosity Index (ASTM D2270)	120	110	103	106
Brookfield Viscosity (ASTM D2983)				
cP @ -31°F/-35°C	90,000	---	---	-
cP @ -13°F/-25°C	---	105,000	---	-
cP @ 5°F/-15°C	---	---	21,000	-
cP @ 14°F/-10°C				70,000
MRV Low Temperature Pumpability (ASTM D4684)				
cP @ -13°F/-25°C	5,550	---	---	-
cP @ 5°F/-15°C	---	7,000	---	-
cP @ 23°F/-5°C	---	---	5,470	6,200

SAE Grade	**10**	**30**	**50**	**60**
High Temperature, High Shear				

@302°F/150°C, cP	3.2	4.0	5.3	5.5
Flash Point °F/°C (ASTM D92)	425°/218°	470°/243°	510°/266°	510°/266°
Fire Point °F/°C (ASTM D92)	455°/229°	500°/260°	550°/288°	550°/288°
Pour Point °F/°C (ASTM D6749)		-18°/-28°	-6°/-21°	
Stable Pour Point °F/°C (FTM 7916 Method 203)	<-41°/<-42°	---	---	---
Four Ball EP Test (ASTM D2783)				
Weld Point, kg	250	250	250	315
Four Ball Wear (ASTM D4172)				
Scar Diameter, mm	0.4	0.4	0.4	0.35
Timken EP Test (ASTM D4172)				
OK Load, lbs	60	60	60	65
Foam Test (ASTM D892)				
Sequence I	0/0	0/0	0/0	0/0
Sequence II	0/0	0/0	0/0	0/0
Sequence III	0/0	0/0	0/0	0/0
Foam Test (ASTM D892)				
Sequence I with 0.1% water	0/0	0/0	0/0	0/0
Sequence II with 0.1% water	0/0	0/0	0/0	0/0
Sequence III with 0.1% water	0/0	0/0	0/0	0/0
FZG Gear Test, 100 RPM, 121°C, 20 hrs. Load Stage 10 (ASTM D4998) mg of weight loss	50	50	50	50
Vickers 35 VQ25 Pump Wear Test				
Mg. weight loss on vanes	12	10	---	-
Mg. weight loss on ring	30	25	---	-
Rust Test (IH BT-9)	Pass	Pass	Pass	Pass
Fluid Compatibility (CAT Procedure)	No sediment	No Sediment	No Sediment	No Sediment
Homogeneity (CAT Procedure)	No Precipitation	No Precipitation	No Precipitation	No Precipitation
Friction Property VC70 Friction	Pass	Pass	Pass	Pass
Fluoroelastomer Seal Test (CAT Procedure)	Pass	Pass	Pass	Pass
Allison C-4 Seal Test	Pass	Pass	Pass	Pass
Allison C-4 THOT				
Tan Increase	1	1	1	1
Carbonyl	0.6	0.6	0.6	0.6
Viton Seal	Pass	Pass	Pass	Pass
Sludge	None	None	None	None
Copper Strip Corrosion Test (ASTM D130)	1a	1a	1a	1a
Sulfated Ash Content % weight (ASTM D874)	1.6	1.6	1.6	1.6