



TECHNICAL DATA

102 Barton Street, St. Louis, Missouri 63104

In-State (314) 865-4100/Out of State 800-325-9962/Fax (314) 865-4107 <http://www.schaefferoil.com>

315 SIMPLEX SUPREME

Simplex Supreme is a universal extreme pressure para-synthetic torque converter fluid that is designed for use in most farm and industrial tractors. Simplex Supreme meets and exceeds the service make-up and refill requirements of the transmissions, differentials, final drives, hydraulic, power steering and wet brake systems of this type of equipment, especially those that employ a common reservoir or sump.

Simplex Supreme is blended from the finest severely hydrotreated polyalphaolefin (PAO) synthetic fluids and solvent refined severely hydro-finished high viscosity index 100% paraffin base oils and available. This unique combination provides the Simplex Supreme with the following advantages:

1. **Excellent Low Temperature Properties**
2. **Superior Oxidation Stability.**
3. **Excellent Resistance to Thermal Degradation.**
4. **A High Viscosity Index**
5. **Excellent Film Strength**
6. **Superior Operating Temperature Reduction**
7. **Compatibility With All Types of Seals and Coatings.**

Blended into these para-synthetic base oils is a carefully balanced performance additive package. This additive package provides the Simplex Supreme with the following performance qualities:

1. Exceptional anti-wear and extreme pressure properties needed to prevent gear and pump wear, especially during heavily loaded conditions.
2. Stable balanced and controlled friction performance in order to provide smooth operation.
3. Increased friction durability with various metallic and non-metallic friction materials. This results in the elimination of problems with excessive noise, weak bindings and embrittlement of elastomeric materials.
4. Reduced brake chatter and noise.
5. Proper frictional characteristics needed to assure the proper and decisive functioning of power take off clutches in a wet brake system.
6. Superior oxidative and thermal stability.
7. Excellent resistance to thermal degradation.
8. Excellent resistance to the formation of sludge and deposit formation.
9. Superior protection against rust and corrosion.
10. Very good to excellent low temperature fluidity in order to provide easier cold weather starting and better wear protection during low temperature conditions.
11. Excellent water tolerance characteristics.
12. Enhanced filterability which minimizes filter blocking due to water contamination.
13. Excellent anti-foaming and air release properties, to ensure smooth, efficient operation and proper lubrication of all components.
14. Excellent compatibility with all types of seals and elastomeric materials
15. Improved and increased operating efficiency and durability.
16. Longer fluid life.

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17. Reduced system maintenance.
18. Reduced downtime, especially when weather conditions are favorable.
19. Longer equipment life.
20. Lower overall operating costs.

Schaeffer Mfg.'s Simplex Supreme can be recommended in the following applications &/or specifications for current & non-current equipment

AGCO-Allis Permatran® 821XL (current)	Ford New Holland ESN-M2C41 A,B & C
ACGO-Allis Power Fluid 821XL (current)	Ford new Holland ESN M2C134D (current)
AGCO Power Fluid 821	Ford New Holland ESN-M2C-159 B & C
Allis Chalmers Part No. 926371	Fiat Hesston AF-87
Allis Chalmers Part No. 924282	IMT
Allis Chalmers Part No. 926372	International Harvester (see Case IH)
Allis Chalmers Part No. 9246634	International-Hough (see Dresser)
Allis Chalmers Part No. 25741	JCB
API GL-4	John Deere J20A & B
Automatic Transmission Fluid Type A	John Deere J20C (current)
CHN (Case-New Holland) MAT 3525 (current)	John Deere J14B & J14C
CHN (Case-New Holland) MAT 3505 (current)	John Deere J21A (All-Weather Hydraulic Fluid)
Case IH MS-1204/JIC 185 (FTD)	John Deere 303 Fluid
Case IH MS-1205 (TFD-II)	John Deere Quatrol®
Case IH MS-1206 (Powergard PTF)	Kioto
Case IH MS-1207 (Hy-Trans® Plus) (current)	Kubota UDT (current)
Case IH MS-1209 (Hy-Tran® Ultra) (current)	Kubota Super UDT (current)
Case IH MS 1210/JIC 145 (current)	Landini Tractor II Hydraulic Fluid
Case IH MS-1230 (Poclairn) (current)	Leyland
Case IH JIC 143	Massey Ferguson (ACGO) M-1110
Case IH JIC 144	Massey Ferguson M-1127 A & B
Case IH JIC 145 (TCH Fluid)	Massey Ferguson M-1129A (Permatran)
Case IH JIC 146 (TFD)	Massey Ferguson M-1135 (current)
Case IH JIC 185 (Hi-Vis)	Massey Ferguson M-1141A (Permatran® III)
Case IH B-5	Massey Ferguson M-1143 (current)
Case IH B-6 (Hy-Tran®)	Mitsubishi
Case-IH HTF SEMS 17001 (Steiger) (current)	Minneapolis Moline Part No 10R1336
Clark Lift Truck Transmission TA 12, TA 18 (current)	Minneapolis Moline Part No 10R1337
Clark lift Truck Transmission HR 500, HR 600 (current)	Minneapolis Moline Part No 10P707-A
Denison HF-O, HF-1, HF-2	Minneapolis Moline 10P708A
Deutz Hydraulic Transmission Fluid	Minneapolis Moline Part No 10P3740-41
Deutz-Allis Power Fluid 821 XL (current)	New Holland FNHA-2-C-200 (current)
Deutz-Allis Power Fluid 821	New Holland FHNA-2-C-201.00 (current)
Deutz-Allis 246634	Mew Holland M2C-134D (current)
Deutz-Allis 25741	New Idea (see White Farm)
Deutz-Allis 272843 (current)	Oliver Type 55
Dresser Transmission Hydraulic Fluid (HMS B806-0002) (current)	Oliver Type 5J
Ford New Holland ESN-M2C41-B	Oliver Q182
Ford New Holland ESN-M2C43	Plessy-Sunstrand
Ford New Holland ESN-M2C48 A & B	Renk Doromat 873
Ford New Holland ESN-M2C53 A & B	Renk Doromat 874 A & B
Ford New Holland ESN -M2C86 B & C	Same Deutz-Fahr
Ford New Holland ESN-M2C92-A	Saur Sunstrand Danfoss Hydrostatic Fluid

Steiger HTFSEMS 17001	White Farm Q-1705
Universal	White Farm Q-1722
Valmet	White Farm Q-1766
Versatile (New Holland) 23M (current)	White Farm Q-1766 B ((UTHF)
Versatile (New Holland) 24M (current)	White Farm Q-1802 (Type 55)
Versatile (New Holland) Gear & Hydraulic Transmission Fluid	White Farm Q-1826 (current)
Vickers (Eaton) I-286-S, 35VQ25, M-2950-S	Yanmar
Volvo VME WB 101 (97303) (current)	Zetor OT-H
White Farm Universal Hydraulic Transmission Fluid	ZF TE-ML-03E (current)
White Farm Part No 30-310-5695	ZF TE-ML-05F
White Farm Part No 30-310-5366	ZF TE-ML-06E
White Farm Part No. 30-310-5709	
White Farm Part No. 30-311-5717	

Simplex Supreme may be used in automatic and heavy duty transmission application where automatic transmission fluid type A fluid is specified.

Simplex Supreme is not recommended where Allison C-4 requirement is specified for use. Allison Transmissions has revised its C-4 approvals to no longer include tractor hydraulic fluids.

Do not use to replace Dexron, Dexron II, Dexron II-E, Dexron III, Dexron® VI, Ford Type F, Ford Type H, Ford Mercon®, Ford Mercon® V, Ford Mercon® SP, Mercon® SP, Chrysler ATF +3 and ATF +4 transmission fluids. If Simplex is used to replace these fluids in passenger cars and pickup trucks and SUV transmission applications damage may occur.

Do not use in powershift transmission applications that specify the use of a Caterpillar TO-4 type fluid. Damage may occur.

TYPICAL PROPERTIES

Specific Gravity @ 60°F	.8519
Viscosity @ 40°C, cSt (ASTM D-445)	52.00 - 63.00
Viscosity @ 100°C, cSt (ASTM D-445)	9.1 – 10.00
Brookfield Viscosity (ASTM D-2983)	
@ -4°F/-20°C, cP	2,400
@ -31°F/-35°C, cP	23,400
Viscosity Index (ASTM D-2270)	150
Flash Point °F/°C (ASTM D-92)	445°/229.44°
Fire Point °F/°C (ASTM D-92)	480°/248.89°
Pour Point °F/°C (ASTM D-97)	-45°/-42.78°
Stable Pour Point °F/°C (FTM D-203)	-40°/-40°
Copper Strip Corrosion Test (ASTM D-130)	1a
I.H. BT-10 Oxidation Test:	
Weight Loss, mg:	
Aluminum	0.2
Copper	1
Iron	.01
Brass	.05
Precipitation Number	0.002
Glassware Rating	A

Typical Properties Continued

John Deere Oxidation Stability Test (JDQ23)	
% Evaporation Loss	0.5
Sludge Formation	None
Additive Separation	None
Humidity Cabinet Rust Test (ASTM D-1748)	
Hours to Rust	+200
Rust Test (ASTM D-665)	
Procedure A (Distilled Water)	Pass
Procedure B (Salt Water)	Pass
Foam Test (ASTM D-892)	
Sequence I	0/0
Sequence II	20/0
Sequence III	0/0
Break Time, seconds	15
Foam Test JDQ-33	
Sequence I	0/0
Sequence II	0/0
Sequence III	0/0
Timken EP Test (ASTM D-2782)	
OK Load Lbs.	30 lbs.
Four Ball Wear Test (ASTM D-4172) (40 kg, 1200 RPM, 1hr)	
Scar Diameter, mm	0.31
Four Ball E.P. (ASTM D-2783)	
Weld Point, kg	200
LWI, kg	40
Vane Pump Wear Test 1,000 psi 176°F/80°C (ASTM D-2882)	
Ring and Vane Weight Loss, mg	2.2
Vickers Vane Pump Test @ 2,000 psi (IP 281)	
Ring and Vane Weight Loss, mg	46
John Deere Water Sensitivity Test (JDQ 19)	
Sediment, % Volume	0
Additive Wt. % Loss	0
Appearance	Clear
John Deere Spiral/Bevel Final Drive	
Gear Wear Test (JDQ 95)	
Spiral Bevel Rating	No Pitting, Rippling or Ridging
Sun Pinion Wear, mm of wear	<0.025
Gear Surface Condition	No Pitting, Rippling or Ridging
Ford 3000 Gear Wear Test	No Pitting
JDQ 94 Powershift Clutch Test	
Total Cycles	2000
Friction Coefficient	
Initial	0.076
Final	0.083
Stall Time, sec.	3.35
Wear, mm	
Disk 1	0.339
Disk 2	0.368
Disk 3	0.313
Disk 4	0.174
Modified FZG (ASTM D-4998)	
Mg weight loss	10 mg

Typical Properties Continued

FZG Test (A/8.3/90) (ASTM D-5182)	
Failure Stage	12 th
CRC L-20 Axle Test	
Tooth Wear	Very Light
Surface Fatigue	None
Massey Ferguson Final Gear Wear Test	
Inches of wear	.0001
John Deere Brake Performance test (JDQ 96)	Pass
John Deere Brake Chatter Test	Pass
Ford Brake Chatter Test	Pass
Allison C-4 THOT Oxidation Test	
TAN Increase	2.28
Carbonyl Increase	0.54
% Viscosity Increase @ 40°C	6.14%
% Viscosity Increase @ 100°C	22.54%
Parts Rating	No sludge and varnish deposits
Aniline Point °F/°C (ASTM D-611)	235°/113°
Total Acid Number (ASTM D-664)	2.5-3.0

Packaging: #315 Simplex Supreme is available in 55 gallon drums, 30 gallon drums, 5-gallon pails and 2- 2 _ gallons per case