



# 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** – This results in instant lubrication of critical bearing, gearing, hydraulic system components and other machine components being instantly lubricated at sub-zero temperatures the moment they start turning.
2. **Superior Oxidation Stability** – Any oil as it is increasingly exposed to high temperature operation undergoes the process of oxidation. This results in the oils thickening and buildup of acidic components. Because of the PAO's and 100% paraffin base oil's uniform molecular structure, the process of oxidation is greatly reduced.
3. **Excellent Resistance to Thermal Degradation.**
4. **High Viscosity Index** – This results in a minimum change in viscosity. The adequate viscosity for proper lubrication of the tractor's hydraulic, transmission, final drive and wet brake system is provided regardless of temperature change.
5. **Excellent Film Strength** – This results in increased wear protection.
6. **Superior Operating Temperature Reduction** – This unique combination of PAO and 100% paraffin base oils have better specific heat values (less heat is absorbed) and better thermal conductivity than conventional oils. These combined properties help to reduce operating temperature.
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 under heavily loaded conditions.**
2. **Stable and controlled friction performance 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.**
3. **Chatter-free power transfer for wet brakes.**
4. **The proper extreme frictional characteristics needed to assure the proper and decisive functioning of power take off clutches in a wet brake system.**
5. **Superior oxidative and thermal stability.**
6. **Superior protection against rust and corrosion.**

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- 7. Very good to excellent low temperature fluidity in order to provide easier cold weather starting and better wear protection during low temperature conditions.**
- 8. Excellent water tolerance.**
- 9. Enhance filterability which minimizes filter blocking due to water contamination.**
- 10. Excellent anti-foaming and air release properties, to ensure smooth, efficient operation and proper lubrication of all components.**
- 11. Excellent compatibility with all types of seals and elastomeric materials.**
- 12. Improved and increased operating efficiency and durability.**
- 13. Longer fluid life.**
- 14. Reduced system maintenance.**
- 15. Reduced downtime, especially when weather conditions are favorable.**
- 16. Longer equipment life.**
- 17. Lower overall operating costs.**

Simplex Supreme meets and exceeds the transmission lubricant, hydraulic and hydrostatic fluid fill requirements of virtually all farm and industrial tractors and mobile equipment.

**Schaeffer Mfg.'s #315 Simplex Supreme can be recommended in the following applications &/or specifications for current & non-current equipment.**

AGCO-Allis Power Fluid 821XL (current)	Mitsubishi
Allis Chalmers Powerfluid 821	Minneapolis Moline Part No. 10R1336
Allis Chalmers Part No. 926371	Minneapolis Moline Part No. 10R1337
Allis Chalmers Part No. 924282	Minneapolis Moline Part No. 10P707-A
Allis Chalmers Part No. 926372	Minneapolis Moline Part No. 10P708-A
Allis Chalmers Part No. 9246634	Minneapolis Moline Part No. 10P3740-41
Allis Chalmers Part No. 257541	New Holland FNHA-2-C-200 (current)
Automatic Transmission Fluid Type A	New Holland FNHA-2-C-201 (current)
Belarus	New Holland ESN M2C41A
Claas	New Holland ESN M2C41B
John Deere J20A & J20B	New Holland ESN M2C43
John Deere J20C & J20D (current)	New Holland ESN M2C48A
John Deere J14B & J14C	New Holland ESN M2C48B
John Deere JDT 303	New Holland ESN M2C53A
John Deere J21A	New Holland ESN M2C53B
John Deere Quatrol®	New Holland ESN M2C86B
Deutz-Allis Powerfluid 821XL (current)	New Holland ESN M2C86C
Deutz-Allis TU	New Holland ESN M2C134A
Case-IH MS1207 (current)	New Holland ESN M2C134B
Case-IH MS-1204 (FTD)	New Holland ESN M2C134C
Case-IH MS-1205	New Holland ESN M2C134D (current)
Case-IH MS-1206 (Powergard PFT)	New Holland ESN M2C92-A
Case-IH MS 1207 (Hy-Tran Plus) (current)	Oliver Type 55, Type5J & Q182
Case-IH MS 1210 (Hy-Tran Plus) (current)	Renk-Doromat 873
Case-IH MS-1210 (TCH)	Renk-Doromat 874A
Case-IH JIC 185 (TFD)	Renk-Doromat 874B (current)
Case-IH JIC 143	Same Deutz-Fahr
Case-IH JIC 144	Sauer Sunstrand/Danfoss Hydrostatic Trans Fluid
Case-IH JIC 145 (TCH)	Steiger Hydraulic Transmission Fluid
Case-IH Hytran Plus (IH B-6)	Sunstrand Hydrostatic Transmission Fluid
Case-IH SEMS 17001 (Steiger)	Versatile Gear & Hydraulic Transmission Fluid
Denison HF-0	Versatile Hygear 23M
Deutz Hydr Trans Fluid	Versatile Hygear 24M
Duetz-Allis 25743 (PF-821 XL), 257541 & 246634	White Universal Hydraulic Transmission Fluid
IMT	White Part No 30-310-5695
International Hough(where Hy-Tran is specified)	White Part No 30-311-5717
Hesston & Hesston-Fiat AF-87 (current)	White Part No 30-310-5366
JCB	White Part No 30-310-5709
Kioto	White Specification Q1705
Kubota UDT	White Specification Q1722
Kubota Super UDT	White Specification Q1766
Landini	White Specification Q1766B (UTHF)
Leyland	White Specification Q1802
McCormick Farmall (part of case)	White Specification Q1826 (current)
Massey Ferguson M-1110	White Specification Type 55
Massey Ferguson M-1127A/B	Universal
Massey Ferguson M-1129A (current)	Valmet
Massey Ferguson M-1135 (current)	Volvo (including latest wet brake requirements)
Massey Ferguson M-1141 (current)	Yanmar
Massey Ferguson M-1143 (current)	ZF TEMPL03 & TEMPL06

**#315 Simplex Supreme may be used in automatic and heavy-duty transmission application where automatic transmission fluid type A is specified. Do not use to replace Dexron®, Dexron® II, Dexron® II, Dexron® II-E, Dexron® III-G, Dexron® III-H, Dexron VI, Ford Type F, Ford Type H, Ford Mercon®, Ford Mercon V®, Ford Mercon®SP, Chrysler ATF +3 (Type 7176E) and ATF +4 transmission fluids. If #315 Simplex Supreme is used to replace these fluids in passenger cars and pickup trucks and SUV transmission applications damage may occur. Do not use in Caterpillar powershift transmission applications that specify the use of a Caterpillar TO-4 type fluid. Damage may occur.**

TYPICAL PROPERTIES

API Gravity 60°F	34.6
Specific Gravity 60°F	.8519
Viscosity @ 100°F, SUS (ASTM D-445)	274.8
Viscosity @ 210°F, SUS (ASTM D-445)	56.9
Viscosity @ 100°F, cSt (ASTM D-445)	59.17
Viscosity @ 210°F, cSt (ASTM D-445)	9.32
Viscosity @ 40°C, cSt (ASTM D-445)	53.9
Viscosity @ 100°C, cSt (ASTM D-445)	9.1
Brookfield Viscosity (ASTM D-2983)	
@ -4°F/-20°C, cP	2400
@ -31°F/-35°C, cP	23400
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	.002
Glassware Rating	A
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.	30lbs.
Four Ball Wear Test (ASTM D-4172) (40 kg, 1200 RPM, 1hr)	
Scar Diameter, mm	.35
Four Ball E.P. (ASTM D-2783)	
Weld Point, kg	200
LWI, kg	40

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TYPICAL PROPERTIES (continued)

Vane Pump Wear Test (ASTM D-2882)	
Ring and Vane Weight Loss, mg	7
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, cm of wear	.00026
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	.122
Final	.104
Stall Time, sec.	1.75
Wear, mm	
Disk 1	0.195
Disk 2	0.169
Disk 3	0.220
Disk 4	0.152
Modified FZG (ASTM D-4998)	
Mg weight loss	10mg
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	No sludge or varnish
Aniline Point °F/°C	235°/112.78°
Total Acid Number (ASTM D-664)	.25

Packaging: #315 Simplex Supreme is available in 55 gallon drums, 30 gallon drums, 5-gallon pails and 2- 2 ½ gallons per case