METATRON™ 715

DESCRIPTION AND APPLICATION:

Metatron™715 is a universal extreme pressure torque converter fluid designed for use in most farm and industrial tractors. **Metatron™715** meets and exceeds the service make-up and refill needs of the transmissions, differentials, final drives, hydraulic and power steering systems and wet brake systems of such equipment, especially those employing a common reservoir or sump.

COMPOSITION AND PERFORMANCE BENEFITS

Metatron™715 is blended from the finest severely solvent refined severely hydro-finished high viscosity index 100% paraffin base stocks available. These severely solvent refined severely hydro-finished paraffin base stocks provide **Metatron™715** with superior oxidation resistance and excellent thermal stability.

ADDITIONAL PERFORMANCE BENEFITS

Blended into these 100% paraffin base stocks is a carefully balanced performance additive package. This additive package provides **Metatron™715** 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.
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. Enhanced 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.

MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS

Metatron™715 meets and exceeds the transmission lubricant, hydraulic and hydrostatic fluid fill requirements of virtually all farm and industrial tractors and mobile equipment.

Metatron™715 can be recommended in the following applications &/or specifications for current & non-current equipment.

AGCO-Allis Power Fluid 821XL (current)
Allis Chalmers Powerfluid 821
Allis Chalmers Part No. 926371
Allis Chalmers Part No. 924282
Allis Chalmers Part No. 926372
Allis Chalmers Part No. 9246634
Allis Chalmers Part No. 257541
Allison C-3 (obsolete)
Allison C-4 (current)
Automatic Transmission Fluid Type A
Belarus
Claas
Eaton Hydraulics
John Deere J20A & J20B
John Deere J20C & J20D (current)
John Deere J14B & J14C
John Deere JDT 303
John Deere J21A
John Deere Quatrol®
Deutz-Allis Powerfluid 821XL (current)
Deutz-Allis TU
Case-IH MS1207 (current)
Case-IH MS-1204 (FTD)
Case-IH MS-1205
Case-IH MS-1206 (Powerfluid)
Case-IH MS-1210 (TCH)
Case-IH JIC 185 (TFD)
Case-IH JIC 143
Case-IH JIC 144
Case-IH JIC 145 (TCH)
Case-IH Hytran Plus (IH B-6)
Case-IH SEMS 17001 (Steiger)
Dension HF-0
IMT
International Hough(where Hy-Tran is specified)
Hesston & Hesston-Fiat AF-87 (current)
JCB
Kioto
Kubota UDT
Landini
Leyland
McCormick Farmall (part of case)
Minneapolis Moline Part No. 10R1337
Minneapolis Moline Part No. 10P707-A
Minneapolis Moline Part No. 10P708-A
Minneapolis Moline Part No. 10P3740-41
New Holland FNHA-2-C-200 (current)
New Holland FNHA-2-C-201 (current)
New Holland ESN M2C41A
New Holland ESN M2C41B
New Holland ESN M2C43
New Holland ESN M2C48A
New Holland ESN M2C48B
New Holland ESN M2C53A
New Holland ESN M2C53B
New Holland ESN M2C86B
New Holland ESN M2C86C
New Holland ESN M2C134A
New Holland ESN M2C134B
New Holland ESN M2C134C
New Holland ESN M2C134D (current)
New Holland ESN M2C92-A
Oliver Type 55
Plessy-Sunstrand Hydraulic Fluid
Renk-Doromat 873
Renk-Doromat 874A
Renk-Doromat 874B (current)
Same Deutz-Fahr
Steiger Hydraulic Transmission Fluid
Sunstrand Hydrostatic Transmission Fluid
Versatile Gear & Hydraulic Transmission Fluid
Versatile Hygear 23M
Versatile Hygear 24M
White Universal Hydraulic Transmission Fluid
White Part No 30-310-5695
White Part No 30-311-5717
White Part No 30-310-5366
White Part No 30-310-5709
White Specification Q1705
White Specification Q1722
White Specification Q1766
White Specification Q1766B
White Specification Q1802
White Specification Q1826 (current)

Massey Ferguson M-1110
Massey Ferguson M-1127A/B
Massey Ferguson M-1129A (current)
Massey Ferguson M-1135 (current)
Massey Ferguson M-1141 (current)
Massey Ferguson M-1143 (current)
Mitsubishi
Minneapolis Moline Part No. 10R1336
White Specification Type 55
Universal
Valmet
Volvo
Yanmar

CAUTION AND WARNINGS

Metatron™715 can 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, Ford Type F, Ford Type H, Ford Mercon, Ford Mercon V, Chrysler ATF +3 (Type 7176E) transmission fluids. If #Metatron 715 is used to replace these fluids in passenger cars and pickup trucks and SAV 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:

API Gravity 15.5°C	28
Specific Gravity 15.5°C	.8871
Viscosity @ 38°C, SUS (ASTM D-445)	318
Viscosity @ 99°C, SUS (ASTM D-445)	57.5
Viscosity @ 38°C, Cst (ASTM D-445)	68.5
Viscosity @ 99°C, Cst (ASTM D-445)	9.5
Viscosity @ 40°C, Cst (ASTM D-445)	61.99
Viscosity @ 100°C, Cst (ASTM D-445)	9.2
Brookfield Viscosity (ASTM D-2983)	
@ -20°C, Cp	3400
@ -35°C, cP	628000
Viscosity Index (ASTM D-2270)	130
Flash Point °C (ASTM D-92)	233.9°
Fire Point °C (ASTM D-92)	246.1°
Pour Point °F/°C (ASTM D-97)	-35°/-37.22°
Stable Pour Point °C (FTM D-203)	-36.11°
Copper Strip Corrosion Test (ASTM D-130)	1a
I.H. BT-10 Oxidation Test:	
Weight Loss, mg:	
Aluminum	.02
Copper	1
Iron	.01
Brass	.05
Precipitation Number	0.002
Glassware Rating	A
John Deere Oxidation Stability Test (JDQ23)	
% Evaporation Loss	0.5
% Viscosity Increase	1.4
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

TYPICAL PROPERTIES CONTINUED:

Foam Test JDQ33	
Sequence I	0/0
Sequence II	0/0
Sequence III	0/0
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
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
Allision C-4 THOT Oxidation Test	No sludge or varnish
Aniline Point °C	104.4°
Total Acid Number (ASTM D-664)	.25