

PERFORMANCE

Heavy Duty TO-4/C4 Transmission Fluid

SWEPCO 714 Heavy Duty TO-4/C4 Transmission Fluid is a high performance *multi-service* lubricant formulated to deliver unsurpassed performance in the widest possible range of applications in mining, construction, trucking, marine, agri-business and municipal services. SWEPCO's superior blend of high VI base stocks and advanced additive chemistry provide excellent, extended drain protection from the most common problems associated with automatic transmissions and hydraulically driven drive train components . . . including poor shift quality, overheating, high temperature oxidation, performance robbing varnish and other deposit formation, costly rust and component wear.



KEY BENEFITS

- Improves performance & component life for power shift transmissions, hydraulic final drives, wet brakes, power steering systems & industrial torque converters requiring Caterpillar® TO-4 & FD-1, Allison® C4 or similar fluids
- Carefully formulated protection for heavily loaded equipment in mining, earth moving, construction, marine, forestry and other off-road applications
- Insures smooth, positive shift quality even in cold
- Lowers operating temperatures
- Unsurpassed protection against deposit formation, varnish, corrosion, wear and rust
- Extends drain intervals beyond conventional oils
- Exceeds performance of many synthetics & OEM branded oils
- Compatible with most common seal and part materials including elastomeric and plastic components

Excellent Performance & Protection for Stressed Drive Train Components



TIMBER



AGRI-BUSINESS



CONSTRUCTION



MARINE

Enjoy better performance, improved productivity and maximum equipment life with SWEPCO 714.

Feature	Benefit
High VI Base Stock	<ul style="list-style-type: none"> • Gives a more uniform viscosity over a wide temperature range • Superior thermal stability prevents "varnish" deposits on valve assemblies, gearing • Better low temperature flow characteristics to help reduce start-up wear
Oxidation Inhibitor	<ul style="list-style-type: none"> • Reduces oil thickening, maximizes fuel economy as oil does not significantly thicken • Helps prevent sludge, varnish and carbon deposits that can lead to clutch slippage • Retains excellent hydraulic qualities to insure proper response and shifting
Special Dispersants and Detergents	<ul style="list-style-type: none"> • Keeps impurities harmlessly suspended in fluid and helps clean gum and other harmful deposits which cause valve malfunction
Rust and Corrosion Inhibitor	<ul style="list-style-type: none"> • Bonds to metal surfaces to keep moisture and acids from penetrating and attacking • Prevents formation of rust particles that interfere with hydraulic valve mechanisms
Anti-Foam Additive	<ul style="list-style-type: none"> • Can lower operating temperatures by dispersing foam and releasing trapped heat • Insures proper response and smooth gear changes thus preventing erratic shifting • Controls fluid level and minimizes loss through vent tube
Oiliness Additive	<ul style="list-style-type: none"> • Enables the oil to penetrate the surface for better lubrication
Anti-Wear Inhibitor	<ul style="list-style-type: none"> • Helps prevent friction and wear on gears and heavy loaded clutch plates • Increases durability of friction discs, less slip time • Helps prevent metal-to-metal contact and insures longer transmission life
Extreme Pressure Additive	<ul style="list-style-type: none"> • Improves film strength of the oil giving it the ability to withstand extreme pressures • Superior copper corrosion protection
Proper Frictional Performance	<ul style="list-style-type: none"> • Insures shift-feel smoothness and smooth lock-up characteristics • Stable friction, compatible with both metallic and non-metallic materials • Eliminates transmission shudder, chatter and noises
Pour Point Depressant Additive	<ul style="list-style-type: none"> • Superior low temperature fluidity and reduced start-up wear
Seal Compatibility	<ul style="list-style-type: none"> • Compatible with fluoroelastomer seals • Prevents shrinkage of seals, eliminates leakage and loss of fluid • Reduces potential maintenance expense of seal replacement
Long Life	<ul style="list-style-type: none"> • Lengthens drain cycles and reduces maintenance labor and waste oil disposal costs
Multi-Purpose Formulation	<ul style="list-style-type: none"> • Designed for heavily loaded power shift transmissions, torque converters, hydraulic final drives, clutches, vehicle steering clutches, oil-cooled disc brakes, power steering, hydraulic and hydrostatic transmissions • Reduces inventory and lubrication errors to save you money
Lab Tec SM Fluid Analysis Program	<ul style="list-style-type: none"> • Can maximize equipment and lubricant life and pinpoint impending problems • Reduces waste

Typical Physical Properties:

ISO Grade	32	220		
SAE Grade	10	20	30	50
Density, @60°F, lbs/gal(kg/l)	7.33(.88)	7.35 (.88)	7.4(.89)	7.46 (.90)
Viscosity				
cSt @ 40°C	30.03	35.64	83.33	228.98
cSt @ 100°C	5.81	7.03	11.9	20.15
Viscosity Index	138	163	135	100
Pour Point, °F (°C)	-33 (-36)	-40 (-40)	-6 (-21)	5 (-15)
Flash Point (COC), °F (°C)	420 (216)	435 (224)	450 (232)	500 (260)
Color	Red	Red	Red	Red

Typical Performance Properties:

Humidity Cabinet (GM 6137-M, Section 1)	No Rust
Power Steering Pump Wear (GM 6137-M, Section 7)	No scuffing, scoring, wear or chatter
Type C-4 Turbo Hydra-Matic Oxidation Test (GM 6137-M Sec K Mod)	
Varnish & Sludge Deposits	Trace
Viscosity Increase @ 210°F (100°C)	4.65%
Clutch Friction (Modified GM 6137-M, Section M)	
Lock up Time @ 5500 cycles, seconds	0.79
Torque @ 5500 cycles & 0.2 seconds ft/lbs	91
Torque Difference @ 1500 cycles vs 5500 cycles ft/lbs	24
Seal Test -- Total Immersion (Buna N) (GM 6137-M, Section J-1)	
Hardness change, points	+2
Volume change %	-0.55
Seal Test -- Dip Cycle (Polyacrylate) (Gm 6137-M, Section J-2)	
Hardness change, points	-2
Volume change %	+3.11

Seal Test -- Dip Cycle (Silicone) (GM 6137-M, Section J-3)		
Hardness change, points	-2	
Volume change %	+3.51	
Gear Wear "Slow Speed FZG" (ASTM D-4998)	30wt	50 wt.
Average wt. loss of 3 runs, <100 mg max	7.2 mg.	20.3 mg
Loss of any 1 run, <150 mg max	Pass	Pass
FZG Failure Load Stage		>=11
Pump Wear, Vickers (35VQ25)	10 wt.	30 wt.
Average wt. loss, vanes <15 mg max	-2.7	n/a
Average wt. loss, ring < 75 mg max	-15.7	n/a
Rust Prevention Characteristics (ASTM 665)		
Procedure A	Pass	Pass
Rust Control J.I Case (MT809) 175 hrs, max	Pass	Pass
Foaming Characteristics (ASTM 892)		
Sequence I	0/0	0/0
Sequence II	0/0	0/0
Sequence III	0/0	0/0

Approved for use in ZF-TE-ML-03C, ZF-TE-ML-07F. Meets requirements of CAT TO-4, Allison C-4, Komatsu KES 07.868.1, API MT-1, Komatsu Dresser Dana Powershift.



A Product of SPX Technology™.

... the cutting edge performance SWEPCO
Customers have come to expect since 1933



Southwestern Petroleum Lubricants, LLC

Fort Worth, Texas • Phone: (817)332-2336 • Fax: (800)736-5823 • Web: www.swepcolube.com