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DATA BULLETIN

Synthetic Powershift Transmission Fluid (SAE 10W, 30, 50)

Advanced Formulation for Powershift and Manual Transmissions, Wet Brakes and Final Drives

AMSOIL Synthetic Powershift Transmission Fluid is specifically designed for high-torque, heavy-duty powershift transmissions. Formulated for extended drain intervals, Powershift Transmission Fluid contains top-quality synthetic base oils and a high level of top-quality additives selected specifically for powershift transmissions. It offers exceptional transmission friction performance, smooth brake operation, gear and bearing wear protection and maximum equipment life.



Helps Prevent Clutch Slippage

AMSOIL Synthetic Powershift Transmission Fluid is compatible with common metallic and non-metallic friction materials. Its stable frictional characteristics help eliminate excessive brake noise and vibration. Its non-slip friction properties are designed to prevent clutch slippage, which can cause glazing or friction-surface deposits and material degradation. Powershift Transmission Fluid is formulated to deliver responsive yet smooth clutch engagements, excellent power transmission through clutches and synchronizers and superior hydraulic fluid performance.

Excellent Wear Protection

AMSOIL Synthetic Powershift Transmission Fluid meets the wear and frictional requirements of the Caterpillar* TO-4 specification and is formulated for superior shear stability. Its superior shear stability allows Powershift Transmission Fluid to stay in grade throughout its service life, providing long-term protection against equipment wear, even when equipment is frequently subjected to sustained high torque.

Superior High- and Low-Temperature Performance

In high temperatures, AMSOIL Synthetic Powershift Transmission Fluid effectively protects components from wear. Its superior oxidative and thermal stability inhibits the formation of varnish, deposits and sludge so equipment runs clean. Synthetic Powershift Transmission Fluid functions as a heat-transfer fluid and helps cool hot-running equipment. In low temperatures, Synthetic Powershift Transmission Fluid flows readily for dependable startup and post-startup protection.

Copper Corrosion, Rust and Foam Inhibition

AMSOIL Synthetic Powershift Transmission Fluid protects equipment from copper corrosion and rust, even during equipment storage. It does not foam in service, protecting equipment from metal-to-metal contact and wear.

- **Helps** eliminate clutch glazing and vibration
- **Protects** against gear and bearing wear
- **Helps** keep components clean
- **Guards** against rust and corrosion

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TYPICAL TECHNICAL PROPERTIES

Synthetic Powershift Transmission Fluid (CTG, CTJ, CTL)

	CTG	CTJ	CTL
SAE Viscosity Grade	10W	30	50
Kinematic Viscosity @ 100ºC, cSt (ASTM D445)	7.1	11.0	18.9
Kinematic Viscosity @ 40ºC, cSt (ASTM D445)	40.0	76.5	174.0
Viscosity Index (ASTM D2270)	140	132	122
Flash Point ºC (ºF) (ASTM D92)	248 (478)	232 (450)	238 (460)
Fire Point ºC (ºF) (ASTM D92)	262 (504)	246 (475)	252 (486)
Pour Point ºC (ºF) (ASTM D97)	-51 (-60)	-40 (-40)	-39 (-38)
Four-Ball Wear Test (ASTM D4172B @ 40 kg, 75ºC, 1200 rpm, 1 hr) scar, mm	0.43	0.43	0.44

Performance Data

AMSOIL Synthetic Powershift Transmission Fluid is recommended for applications requiring the following specifications:

	CTG	CTJ	CTL
Allison* C-4	X	X	
Caterpillar* TO-4	X	X	X
Dana* Powershift Transmission	X	X	
Komatsu* KES 07.868.1	X	X	X
Rockwell*/Eaton*/Fuller* CD-50			X
ZF* TE-ML 03C	X	X	

APPLICATIONS

- Dozers
- Heavy-duty manual transmissions
- Wheel loaders and crawlers
- Backhoe loaders
- Cranes
- Off-road fork trucks
- Harbor-handling equipment
- Railway equipment
- Mining equipment
- Road graders
- Commercial marine applications

AMSOIL Synthetic SAE 50 Powershift Transmission Fluid is formulated for use in Rockwell/Eaton/Fuller, Spicer*, Fabco*, Warner* and other large truck manual transmissions.

AMSOIL Synthetic 10W, 30 and 50 Powershift Transmission Fluids can be used in Caterpillar, Allison, Komatsu, Clark*, Hurth*, Borg-Warner*, Twin Disc*, Voith*, ZF, Funk* and Brockhouse* powershift-type transmissions and Eaton/Rockwell/Fuller transmissions.

INSTALLATION

AMSOIL Synthetic Powershift Transmission Fluid is fully compatible with other TO-4 fluids used in powershift applications. To install AMSOIL Synthetic Powershift Transmission Fluid, drain the fluid in the system, replace the filter (if equipped) and install the appropriate viscosity of Powershift Transmission Fluid.

SERVICE LIFE

AMSOIL Synthetic Powershift Transmission Fluid provides extended service life beyond conventional petroleum fluids if Synthetic Powershift Transmission Fluid is kept free of dirt and moisture. Oil analysis is recommended if extending service intervals beyond equipment manufacturer recommendations.

AMSOIL Synthetic Powershift Transmission Fluid may be used up to 60,000 miles or one year (whichever comes first) in CD-50 manual transmission applications or as specified by the OEM.

AMSOIL PRODUCT WARRANTY

AMSOIL products are backed by a Limited Liability Warranty. For complete information, visit www.amsoil.com/warranty.aspx.

HEALTH AND SAFETY

This product is not expected to cause health concerns when used for the intended applications and according to the recommendations in the Safety Data Sheet (SDS). An SDS is available online at www.amsoil.com or upon request at (715) 392-7101. **Keep Out of Reach of Children.**

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