76 Lubricants

HT/4 Fluid

76® HT/4 Fluid is a high-performance multifunctional fluid developed for use in transmissions, final drives and hydraulic systems of off-highway equipment where a fluid meeting Caterpillar TO-4 performance requirements is specified. It provides substantially improved friction and antiwear performance compared with older API CD/TO-2 quality fluids, resulting in longer equipment life and reduced risk of field failure. The SAE 10W and 30 viscosity grades also are recommended for use in Allison off-highway heavy-duty automatic transmissions where a C-4 quality fluid is specified.

HT/4 Fluid is formulated with state-of-the-art additive technology that provides improved deposit control, corrosion protection and load-carrying capacity for better equipment protection and more reliable operation. Its carefully optimized frictional properties prevent clutch slippage for smoother, more consistent transmission operation and also provide improved wet brake performance.

Applications
- Powershift transmissions, hydrostatic transmissions, torque converters, final drives and hydraulic systems of Caterpillar, Euclid, Komatsu and other off-highway construction and mining equipment
- Heavy-duty automatic transmissions where the OEM specifies an Allison C-4 quality fluid
- Heavy-duty manual and semi-automatic transmissions in trucks and buses where the OEM specifies a Caterpillar TO-4 quality fluid or a heavy-duty engine oil

Note: *Typically, the SAE 10W and 30 viscosity grades are recommended for hydraulic systems and transmissions, the SAE 50 and 60 viscosity grades are recommended for differentials and final drives, and the SAE 50 viscosity grade is recommended for heavy-duty manual transmissions. Refer to the OEM recommendations for selection of the proper viscosity grade.*

HT/4 Fluid SAE 30 is OEM-approved for service fill in the following applications:

- Allison TES-439, for off-highway applications (approval no. 439-33412013)

HT/4 Fluid meets or exceeds the requirements of:

- Caterpillar TO-4, TO-2[1]
- Vickers (Eaton) M-2950-S

[1] *Obsolete specification.*

Caterpillar TO-4 Fluid For Off-Highway Equipment

HT/4 Fluid is recommended for service fill in:

• ZF torque converter transmissions in off-highway equipment where the OEM specifies a TE-ML 03C quality lubricant (SAE 10W, 30)

Features/Benefits
• Well-balanced frictional properties for efficient clutch operation and improved wet brake performance
• Excellent oxidation resistance and thermal stability for long fluid life
• High load-carrying capacity for protection of final drive gear sets
• Excellent deposit control and wear protection
• Protects yellow metals against corrosion
• High shear stability
• Compatible with a wide variety of seals and friction materials
• Good low-temperature properties
• Good foam resistance

HT/4 Fluid
Typical Properties

SAE Grade	10W	30	50	60
Specific Gravity @ 60°F	0.872	0.882	0.892	0.896
Density, lbs/gal @ 60°F	7.26	7.34	7.43	7.46
Color, ASTM D1500	2.5	3.0	4.0	5.5
Flash Point (COC), °C (°F)	213 (415)	233 (451)	242 (468)	281 (538)
Pour Point, °C (°F)	-39 (-38)	-33 (-27)	-28 (-18)	-12 (10)
Viscosity, Brookfield				
cP @ -35°C	45,350	—	—	—
Viscosity, Kinematic				
cSt @ 40°C	41.0	96.0	224	324
cSt @ 100°C	6.5	11.1	19.1	24.0
Viscosity Index	109	101	96	94
Total Base Number (TBN), ASTM D2896	7.6	7.6	7.6	7.6
Zinc, wt %	0.110	0.110	0.110	0.110

Health and Safety Information
For recommendations on safe handling and use of this product, please refer to the Material Safety Data Sheet via *http://w3apps.phillips66.com/NetMSDS.*