



CITGO Final Drive Oil

OVERVIEW



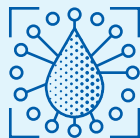
- A new generation lubricant that meets the Caterpillar FD-1 specification and is designed for heavy duty construction equipment, final drives, and axles operating under severe loads and temperatures.
- Compared to TO-4 lubricants, delivers greater protection against gear and bearing fatigue resulting from the higher loads and operating conditions frequently encountered in track type equipment and large off-road haul truck final drives.
- Compatible with TO-4 lubricants in the event of lubricant mixing, with the understanding the product mixing does result in decreased level of performance.
- Should not be used in diesel engines or in compartments that contain friction materials unless recommended by the equipment manufacturer.
- Available Viscosity Grades: SAE 60.

FEATURES & BENEFITS



- Engineered for performance – meets the Caterpillar FD-1 specification and has passed the FD-1 test requirements.
- Superior protection against rust, corrosion, and foaming.
- Minimizes lubricant oxidation that results from high operating temperatures and loads.
- Superior wear protection in highly loaded bearings and gears protects against fatigue and optimizes component life.
- Up to twice the lubricant service life compared to TO-4 type lubricants. (Refer to chart for performance criteria.)
- Longer component life cycles result in improved equipment productivity and reduced equipment rebuild costs and downtime.
- Improved overall profitability, especially in high production construction, mining, and aggregate operations.

APPLICATIONS



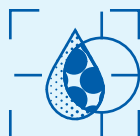
- Formulated to meet the performance requirements of Caterpillar FD-1 (SAE 60 grade) and Caterpillar final drives and axles, where recommended by Caterpillar.

PERFORMANCE CRITERIA	TO-4 60	CITGO FINAL DRIVE OIL
Lubricant Service Life	2000 Hours	4000 Hours*
Cat FD-1 Approval	No	Yes
Passing FD-1 Testing	No	Yes
LubeAlert HD Oil Analysis	Availability Varies	Yes
Optimum Gear & Bearing Life	No	Yes

* Lubricant Service Life is dependent on the following:

- Operating conditions, vehicle condition and maintenance practices.
- Inspect fluid levels regularly and add as needed with CITGO Final Drive Oil
- Use CITGO LubeAlert Oil Analysis program to support maximum component life

PROPERTIES



Typical Properties for CITGO Final Drive Oil:

SAE Grade	60
Material Code	633329001
Gravity, ASTM D4052, °API	27.7
Density, Pounds Per Gallon	7.40
Flash Point, COC, ASTM D92, °F (°C)	265 (129)
Viscosity ASTM D445	
cSt at 40°C	334
cSt at 100°C	25.7
Viscosity Index, ASTM D2270	100
Pour Point, ASTM D97, °F (°C)	-47 (-44)
Color, ASTM D1500	L4.0
Total Base Number, mgKOH/g D664	3.3
Foam Test, Seq. I, Tendency, mL D892	5-0
Foam Test, Seq. II, Tendency, mL D892	10-0
Foam Test, Seq. III, Tendency, mL D892	10-0
Appearance	C&B
Moisture, Hot Plate	Pass

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