



CITGO FINAL DRIVE OIL

Date 04/18

**DESCRIPTION:** CITGO Final Drive Oil is 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, CITGO Final Drive Oil will deliver 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. CITGO Final Drive Oil is compatible with TO-4 lubricants in the event of lubricant mixing with the understanding the product mixing does result in decreased level of performance. CITGO Final Drive Oil should not be used in diesel engines and should not be used in compartments that contain friction materials unless recommended by the equipment manufacturer.

Available Viscosity Grades: SAE 60.

- QUALITIES:** CITGO Final Drive Oil is designed with the following qualities:
- Performance engineered formula meeting Caterpillar FD-1 specification and has passed the Cat FD-1 test requirements
  - Superior protection against rust, corrosion and lubricant foaming
  - Minimizes lubricant oxidation resulting from higher operating temperatures and loads
  - Protects against gear and bearing fatigue resulting from operating temperatures and loads

**APPLICATIONS:** Formulated to meet the performance requirements of:

- Caterpillar FD-1 – SAE 60 grade

Caterpillar Final Drives and Axles where recommended by Caterpillar

- Up to two times the lubricant service life compared to TO-4 type lubricants. (Refer to chart below for Performance Criteria.)
- Superior wear protection in highly loaded bearings and gears optimizes component life
- CITGO LubeAlert<sup>®</sup> HD Oil Analysis is included to provide optimum lubricant service and component life and reduce overall maintenance costs.
- Longer component life cycles results in improved equipment productivity and reduced equipment rebuild costs and downtime
- Improved overall profitability especially in high production construction, mining and aggregate operations

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 HD Oil Analysis program to support maximum component life

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**TYPICAL PROPERTIES:**

<b>CITGO FINAL DRIVE OIL</b>	
<b>SAE Grade</b>	<b>60</b>
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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