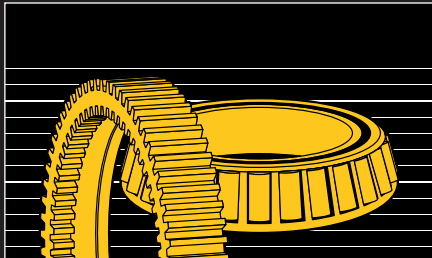


Final Drive and Axle Oil Synthetic (FDAO Syn)

For all Cat® Final Drives and Axles that previously specified the use of TO-4 oils, and that do not contain friction material.



Cat Final Drive & Axle Oil Synthetic (FDAO Syn) is an extended drain lubricant for final drives of Caterpillar Off-Highway Trucks, Track-Type Tractors* and certain other machine models. It is specially formulated for use in extremely high load, heavy duty operations and applications where high temperatures cause a mineral oil based lubricant to experience severe oxidation.

Recommended use

Cat FDAO Synthetic is blended with a special formulation of synthetic base stock and a unique additive package. It may be used in any compartment in which FDAO is used. Neither FDAO™ nor FDAO Synthetic are used in compartments with friction materials unless FDAO has been specified. **NOT FOR USE IN ENGINES, TRANSMISSIONS OR HYDRAULIC SYSTEMS.**

Extended Drain Interval

FDAO Synthetic has been proven to provide longer drain intervals than either FDAO or Cat Transmission & Drive Train Oil (TDTO™) in the final drives of Caterpillar machines. FDAO has a recommended drain interval of 3,000 hours in the final drives of Cat Off-Highway Trucks. TDTO has a recommended drain interval of 2,000 hours in final drive applications. Whereas no specific drain interval is specified for FDAO Synthetic, this outstanding product has been proven to extend drain periods to 6,000 hours of operation or more without significant oxidation or depletion of additives.

Information Sources

We can help you determine the right oil for your Cat machines and engines. You can also refer to your "Operation and Maintenance Manual" or Service Publication SEBU6250 (Caterpillar Machine Fluid Recommendations). An electronic version of this service publication is available at www.CAT.com. Simply choose these selections: Products / Parts and Service / Fluids / Machine Lubricant Recommendations.

* Steel tracked machines with elevated final drives.

FDAO Syn Characteristics*

SAE Viscosity Grade	Synthetic
Test or Specification	
CAT	FD-1
ISO Viscosity Grade (ISO)	Multigrade
Gravity, @ API (ASTM D287)	33.4
Appearance (Visual)	Clear & Bright
Flash Point, °C (°F) (ASTM D92)	246° (474°) minimum
Pour Point, °C (°F) (ASTM D97)	-36° (-38°)
Viscosity (ASTM D445)	
cP @ -20°C (ASTMD5293)	37,000
cST @ 40°C (ASTM D445)	318
cST @ 100°C (ASTM D445)	31.7
Viscosity Index (ASTM D2270)	135
Brookfield Viscosity (ASTM D2983)	
cP @ -30°C	130,000
Copper Strip (ASTM D130, 2 hrs. @ 100°C)	1a

* The values shown are typical values and should not be used as quality control parameters to either accept or reject product. Specifications are subject to change without notice.

Final Drive and Axle Oil Synthetic (FDAO Syn)

Unique formula for improved life and performance

Cat Final Drive and Axle Oil Synthetic (FDAO Syn) is formulated for use in Cat equipment final drives, axles, bevel gears and differentials in which gear and bearing loads and temperatures are high. Using FDAO Syn reduces contact fatigue, extending gear and bearing life.

FDAO Syn is designed specifically for protection of highly loaded components. It does not develop enough friction coefficient to satisfy the requirements of most brakes and clutches. It should not be used in clutch and brake compartments unless those compartments are specifically designated for FDAO use.

Cat FDAO Syn also:

- Is compatible with TDTO oils and the seals for their compartments.
- Provides excellent protection against rust and copper corrosion.
- Minimizes foaming.
- Oxidizes at a low rate for improved oil life.
- Extends oil change intervals, reducing downtime.

S-O-SSM Services for early detection

We recommend protecting your investment by using a scheduled fluid sampling program. Our S-O-SSM Services program is the ultimate detection and diagnostic tool for your equipment. It helps you head off potential problems before they can lead to major failures and costly unscheduled downtime.

Proper use for health and safety

According to toxicology information, Cat FDAO Syn has little or no adverse effects if handled and used properly. No special precautions are suggested beyond maintaining good personal hygiene and avoiding prolonged, repeated skin contact.

For more information, refer to the Material Safety Data Sheet on the Caterpillar website, www.catmsds.com

FDAO Syn Part Numbers

Package size	Part Numbers
55 GAL (208 Liters)	198-7450
5 GAL (18.9 Liters)	208-2390

Validation Tests

The **performance** of Cat FDAO Syn **equaled or exceeded** that of Cat TDTO (an excellent lubricant) in the following tests:

- Bearing Life
- Seal Compatibility
- FZG Gear Pitting
- FZG Scuffing
- D8N 4-Square
- Lubricant Parameter
- Pour Point
- Rust
- Copper Corrosion
- TO-4 Fluid Compatibility
- TO-4 Homogeneity
- Foaming
- Flash Point
- Pumpability
- High-Temperature Shear
- KRL Shear
- Thermal Oxidation Stability
- High Torque, Low-Speed Axle

Developed by Caterpillar

Caterpillar develops and tests Cat FDAO Synthetic to meet or exceed the Caterpillar FD-1 standard, ensuring the best protection and longest life for Caterpillar final drive and axle components.

