



**Product Name:** Transmission Fluid TO-4 50

**Application:** High-Performance Mineral-Based Transmission & Drive Train Oil

**Viscosity Grade:** SAE 50

**Specification Level:** Caterpillar TO-4

**Drain Interval:** As per OEM recommendation (typically 250–500 hours in off-highway equipment)

## Product Overview

Transmission Fluid TO-4 50 is a **premium monograde mineral oil** designed to meet the high demands of **Caterpillar TO-4 specifications** for gear trains and heavily loaded drivetrain components. Its formulation balances **friction characteristics, anti-wear protection, and oxidation resistance**, ensuring:

- Reliable gear protection under high-load conditions
- Noise-free wet brake operation
- Long oil and component life in severe environments

## Application

Transmission Fluid TO-4 50 is engineered for use in **final drives, differentials, manual transmissions, and transfer cases of off-road equipment** operating in **extreme load and high temperature conditions**. It is ideal for **mining, quarrying, and heavy construction equipment** requiring TO-4 SAE 50 fluid.

## Performance Benefits

- **Extreme Pressure Protection**  
Reduces metal-to-metal contact in high-load gear systems and final drives.
- **High Viscosity Strength**  
Maintains stable film in hot climates and severe torque conditions.
- **Frictional Stability**  
Provides smooth clutch and brake engagement without chatter.
- **Oxidation & Sludge Resistance**  
Maintains clean operation even under prolonged high-temperature use.
- **Seal & Material Compatibility**  
Safe for use in systems with a wide range of seals and materials.

## Meets and Approvals

- Caterpillar TO-4
- Komatsu KES 07.868.1
- Allison C-4 (off-highway only)
- Compliant with legacy TO-2 applications where SAE 50 is suitable.

## Typical Properties

Property	Method	Typical Value
Appearance	Visual	Bright, clear amber
Density @ 15°C	ASTM D4052	0.899 g/cm <sup>3</sup>





Kinematic Viscosity @ 40°C	ASTM D445	240 – 265 mm <sup>2</sup> /s
Kinematic Viscosity @ 100°C	ASTM D445	21.5 – 23.5 mm <sup>2</sup> /s
Viscosity Index	ASTM D2270	≥95
Flash Point (COC)	ASTM D92	≥245°C
Pour Point	ASTM D97	-15°C
Copper Corrosion	ASTM D130	1b
FZG Gear Test	DIN 51354	Pass (Stage ≥12)
Foam Test (Seq I/II/III)	ASTM D892	Pass

*Values are representative of current production and may vary within specification limits*

## Storage and Handling

- Store in a cool, dry place away from direct sunlight and temperatures above 60°C.
- Ensure containers are sealed to prevent contamination.
- Avoid mixing with other oils to maintain full performance

