

# Diesel Engine Oil (CG-4)

SAE 15W-40  
SAE 10W-30

For Caterpillar® on-highway truck, earthmoving, commercial, and marine diesel engines

Developed, tested, and approved by Caterpillar, Cat Diesel Engine Oil (CG-4) ensures optimum life and performance in Cat® on-highway truck, earthmoving, commercial, and marine diesel engines.

## Recommended use

### Application

Cat DEO (CG-4) is preferred factory fill oil for new Cat machines and engines, as well as Cat dealer service shops. It is recommended for:

- Cat diesel engines (excluding 3600), including low emission on-highway truck, earthmoving, commercial, and marine diesel engines.
- automotive gasoline engines that require the latest API SH Service Classification.
- OEM heavy-duty diesel engines, including low emission designs that permit the use of API CG-4, CF-4/SH Service Classification oils.

### Fuel compatibility

The CG-4 performance of Cat DEO provides protection for Cat engines operating on a higher range of % Fuel Sulfur:

Fuel Injection Method	% Fuel Sulfur
Direct Injection (DI)	0.05% to 1.00%
Precombustion (PC)	0.05% to 0.50%

### Information sources

We can help you determine the right oil for your Cat machines and engines or you can refer to your "Operation and Maintenance Manual" or service publications SEBU6385 (On-Highway Truck), SEBU6250 (Earthmoving Machine), and SEBU6251 (Commercial and Marine).

Note: Direct fuel injection—if fuel sulfur exceeds ~1.00%, shorten the oil change period based on S-O-S analysis results.

Precombustion fuel injection—if fuel sulfur exceeds ~0.60%, shorten the oil change period based on S-O-S analysis results or use Cat DEO single-grade oil API CF with 13.5 TBN.

## Typical Characteristics\*

SAE Viscosity Grade	15W-40	10W-30
API Service Classification		
Diesel	CG-4, CF-4, CF	CG-4, CF-4, CF
Gasoline	SH	SH
API Gravity at 16°C (ASTM D287)	29	29.7
Flash Point, °C (ASTM D92)	220	216
Pour Point, °C (ASTM D97)	-33	-30
Viscosity,		
cP @ -15°C	3280	—
cP @ -20°C	9500	3240
cP @ -25°C	—	9500
cSt @ 40°C (ASTM D445)	107	74.7
cSt @ 100°C (ASTM D445)	14.3	11.3
Viscosity Index (ASTM D567)	136	143
Zinc, % Wt. (Spectro or AA)	0.14	0.13
Sulfate Ash (ASTM D567)	1.40	1.36
TBN (ASTM D2896)	10.5	10.1

\* 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. This data sheet was developed for use of Cat DEO (CG-4) oil sold outside of North America.

# Diesel Engine Oil (CG-4)

## Unique formula for maximum performance and protection

Field proven for consistent performance, Cat Diesel Engine Oil (CG-4) reduces oil consumption up to 40% over monograde oils like SAE 30. Cat DEO (CG-4):

- keeps soot suspended with strong soot dispersancy, resulting in cleaner pistons for extended engine life, lower oil consumption, and lower emissions.
- is tested, certified, and licensed by API and meets other major OEM engine performance requirements.
- is compatible with OEM low emission engine designs.
- allows you to standardize on one oil for your entire fleet.
- optimizes oil change intervals, providing strong soot dispersancy and added reserve to neutralize the sulfuric acids that can build up and lead to corrosive wear. (S-O-S<sup>SM</sup> fluid analysis and genuine Cat oil filters also help you optimize change intervals.)

## Premium oil for optimum engine life and performance

API CG-4 defines a minimum engine performance level for commercial engine oils. Many companies develop two types of oil—fighting grade and premium. Generally, fighting grade oils just meet API CG-4 specifications, while premium oils far exceed them. You need to make this distinction with your oil supplier when you make your decision to purchase oil. Unfortunately, there is no easy way to distinguish these two performance levels without conducting extensive used oil analysis on your engine and comparing the results of the two oils.

Caterpillar has developed only one CG-4 oil. Cat DEO (CG-4) is a premium oil that greatly exceeds the minimum requirements of API CG-4. The chart on the right shows the tests Cat DEO (CG-4) must pass in order to provide optimum engine life and performance at the lowest possible owning and operating cost.

## Fluid analysis for early detection

We recommend protecting your investment by using scheduled fluid analysis. Our S-O-S analysis program is the ultimate detection and diagnostic tool for your equipment, helping 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 Diesel Engine Oil (CG-4) has little or no adverse effects if handled and used properly. No special precautions are suggested beyond attending to good personal hygiene and avoiding prolonged, repeated skin contact. For more information, refer to the “Material Safety Data Sheet,” SEFV1602.

## Comparative Tests

Cat DEO (CG-4) and other commercial engine oils must pass standard industry tests to be classified as API CF-4 or CG-4 oils. Cat DEO (CG-4) oil, however, exceeds the API CF-4 and CG-4 minimum performance requirements by passing additional multicylinder engine tests.

Test Parameter evaluated	Caterpillar DEO (CG-4)	Commercial CG-4 Oil	Commercial CF-4 Oil
<b>Cat 1K</b> Piston deposits and oil control, 0.40% sulfur fuel	Pass	Fail	Fail
<b>Mack T-7</b> Viscosity increase with soot, 0.40% sulfur fuel	Pass	Fail	Fail
<b>Mack T-6</b> Piston deposits, 0.40% sulfur fuel	Pass	Fail	Fail
<b>L-38</b> Bearing corrosion	Pass	Fail	Fail
<b>Cat 1N</b> Piston deposits and oil control, 0.05% sulfur fuel	Pass	Fail	Fail
<b>Mack T-8</b> Viscosity increase with soot, oil filter plugging, and oil consumption, 0.05% sulfur fuel	Pass	Fail	Fail
<b>GM 6.2L</b> Roller follower wear, 0.05% sulfur fuel	Pass	Fail	Fail
<b>L-38</b> Bearing corrosion and viscosity shear loss	Pass	Fail	Fail
<b>Sequence III E</b> Oil oxidation	Pass	Fail	Fail
<b>Cummins Corrosion</b> Copper, lead, and tin corrosion	Pass	Fail	Fail
<b>D 892 Foam</b> Oil foaming resistance	Pass	Fail	Fail
<b>Cat C-12 Multicylinder Engine Test</b> Oil control and wear	Pass	Fail	Fail
<b>Cat 3406E Multicylinder Engine Test</b> Piston deposits and piston ring sticking	Pass	Fail	Fail
<b>Cat 3500 Multicylinder Engine Test</b> Piston deposits and wear	Pass	Fail	Fail