

CITGO CITGARD® 500 MULTI-VISCOSITY
GRADE ENGINE OILS



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DESCRIPTION: CITGO CITGARD 500 Multi-Viscosity grade engine oils are high quality, heavy-duty crankcase oils. This product line is manufactured with the latest additive technologies to provide superior performance in diesel engine service. Designed to keep high-output, low emission engine designs clean and operating efficiently, these products exceed the requirements for heavy-duty truck, agricultural, and construction equipment needing API CI-4 Service Category Performance.

- PERFORMANCE BENEFITS:**
- Excellent detergency control of piston ring deposits in highly stressed engines.
 - Excellent fuel soot dispersancy and oxidation resistance protect against excessive oil viscosity increase.
 - Superior wear protection in all engine designs.
 - Excellent high-temperature high-shear rate viscosity without sacrificing low-temperature fluidity.
 - Excellent TBN properties prevent corrosive wear.
 - Proven oil consumption control in heavy duty service.
 - Excellent water tolerance. Meet Fleetguard and GMC filterability requirements.
 - Excellent shear stability assures stay-in-grade performance.

PERFORMANCE CAPABILITIES*:	Caterpillar	John Deere	Allison C-4
	Caterpillar ECF-1	Mack EO-M Plus, EO-M, &	Deutz
	Cummins CES 20078, 20076, & 20071	EO-N Premium Plus	EMA, ACEA, JAMA Global DHD-1
	Daimler Chrysler 228.3	Navistar International	JASO DH-1
	Detroit Diesel	Volvo VDS-3	MAN 3275
	Ford M2C171	ACEA E5	MTU Type 2

**Some performance capabilities are applicable to specific viscosity grade(s).*

APPLICATIONS: CITGARD 500 Multi-Viscosity grade engine oils are intended for use in heavy-duty service in commercial trucks, agricultural equipment, construction equipment, stationary engines, and other diesel fueled engine applications. They also provide outstanding service in gasoline engines in passenger cars, light trucks, off-road vehicles, recreational vehicles, and other heavy-duty gasoline engine applications. The multi-viscosity grades permit year round use in most areas by offering improved low temperature startability with full lubrication at high operating temperatures. This is important in heavily loaded, high-output engines.

Specific viscosity grades are approved for use in power-shift, manual, and hydrostatic transmissions, final drives, and hydraulic systems where the equipment manufacturer designates the use of a heavy-duty, detergent-type engine oil. See CITGARD 500 Single-Viscosity Grade Engine Oils Product Information Sheet for more options. Check Owners' Manuals for specific viscosity grade and API Service Category recommendations.

TYPICAL PROPERTIES:

CITGARD® 500 MULTI-VISCOSITY GRADE ENGINE OILS

SAE Grade	15W-40	20W-50
Material Code	622315001	622350001
Gravity, ASTM D 4052, °API	29.1	28.1
Pounds Per Gallon	7.34	7.39
Flash Point, ASTM D 92 (COC), °F (°C)	450 (232)	471 (244)
Viscosity, ASTM D 445, cSt at 100°C	15.7	18.4
ASTM D 445, cSt at 40°C	119	164
Viscosity Index, ASTM D 2270	140	125
HTHS Rate Vis at 150°C & 10 ⁶ sec ⁻¹ , cP	4.2	4.8
CCS Vis, ASTM D 5293, cP at °C	6200 at -20°C	7200 at -15°C
MRV Vis, ASTM D 4684, cP at °C	22,500 at -25°C	19,700 at -20°C
MRV Yield Stress, ASTM D 4684, Pa at °C	<35 at -25°C	<35 at -20°C
Pour Point, ASTM D 97, °F (°C)	-11 (-24)	-6 (-21)
Sulfated Ash, ASTM D 874, %m	1.2	1.2
TBN (Total Base No.), ASTM D 2896	10	10
NOACK volatility, ASTM D 5800, % Loss	12	7
Color, ASTM D 1500 (may vary by location)	3.5	4.0

API Service Categories

CI-4	X	
CH-4	X	
CG-4	X	
CF-4	X	X
CF	X	X
CD (obsolete)	X	X
SL	X	X
SJ	X	X

Approvals or performances that are

Viscosity Grade specific:

ACEA E5-02	X
Allison C-4	X
Caterpillar ECF-1	X
Cummins CES 20078, 20076, & 20071	X
Daimler Chrysler 228.3	X
Detroit Diesel Series 50 & 60	X
Detroit Diesel 93K215	X
Deutz	X
EMA, ACEA, JAMA Global DHD-1	X
JASO DH-1	X
Mack EO-N Premium Plus, EO-M Plus	X
MAN 3275	X
MTU Type 2	X
US CID A-A-52306	X
Volvo VDS-3	X