

CITGO CITGARD® 600 ENGINE OILS
MULTI-VISCOSITY GRADE

Date 09/15

DESCRIPTION: CITGO CITGARD 600 Engine Oils Multi-Viscosity Grade use superior technology to protect current and older model low-emissions engines equipped with exhaust after-treatment systems and other new design features. These products exceed the API CJ-4 heavy duty requirements as well as existing API CI-4 PLUS and earlier categories.

PERFORMANCE BENEFITS:

- Formulated specifically for engines using Ultra Low Sulfur Diesel (ULSD)
- Provides advanced soot control utilizing SootArrest™, soot dispersant chemistry
- Offers advantages for current model year and older heavy duty commercial trucks and other diesel-fueled applications, including off-road equipment
- State-of-the-art wear control technology for reduced wear
- Exceptional oxidation and thermal protection for operating at extreme temperatures
- Extends diesel particulate filter (DPF) life
- SAE 10W-30 improves fuel economy and cold cranking lubrication

PERFORMANCE CAPABILITIES: Equipment requiring API CJ-4, CI-4 PLUS, CI-4, SM (15W-40 and 10W-30 only)
Detroit Diesel 93K218 (SAE 15W-40 only)
Caterpillar ECF-3
Mack EO-O Premium Plus (SAE 15W-40 only)
Cummins CES 20081
Volvo VDS-4 (SAE 15W-40 only)
Mercedes 228.31 (SAE 15W-40 only)

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

APPLICATIONS: Recommended for use in heavy-duty service in commercial trucks, agricultural equipment, construction equipment, stationary engines, and other diesel-fueled engine applications. Permits year-round use by offering improved low temperature startability with full lubrication at high operating temperatures.

TYPICAL PROPERTIES:**CITGO CITGARD® 600 ENGINE OILS MULTI-VISCOSITY GRADE**

SAE Grade	15W-40	10W-30
Material Code	622615001	622613001
Gravity, ASTM D 4052, °API	30.1	30.8
Density, lbs/gal	7.32	7.26
Flash Point, ASTM D 92 (COC), °F (°C)	450 (232)	431 (222)
Viscosity, ASTM D 445, cSt at 40°C	118	81
cSt at 100°C	15.6	11.8
Viscosity Index, ASTM D 2270	139	140
HTHS Rate Viscosity at 150°C, ASTM D 4683, cP	4.3	3.55
CCS Viscosity at -20°C, ASTM D 5293, cP	5,850	6,440
MRV Pumpability at -25°C, ASTM D 4684, cP	16,100	16,950
MRV Yield Stress at -25°C, ASTM D 4684	<35	<35
Pour Point, ASTM D 97, °F (°C)	-22 (-30)	-33 (-36)
Color, ASTM D 1500	L3.5	L3.5
Sulfated Ash, ASTM D 874, m%	1.0	1.0
Total Base Number, ASTM D 2896, mg KOH/g	10	10

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