

**CITGO CITGARD® SYNDURANCE® PLUS
SYNTHETIC HEAVY DUTY ENGINE OILS**

Date 3/17

DESCRIPTION: CITGO CITGARD SynDurance PLUS Synthetic Heavy Duty Engine Oil's Advanced Fuel Efficiency formula delivers maximum fuel economy, extreme cold temperature performance and superior engine durability. These engine oils contain a careful balance of synthetic base oil components with a shear stable viscosity modifier, which insures heavily loaded engine parts have protective oil films.

CITGO CITGARD SynDurance PLUS Synthetic Heavy Duty Engine Oils meet the performance requirements of newer engines operating at higher temperatures, with lower RPM, higher torque and advanced combustion design.

CITGO CITGARD SynDurance PLUS Synthetic Heavy Duty Engine Oils have been field tested for over a million miles with engine teardown inspections compared to premium SAE 15W-40 viscosity grade oils. The results indicate superior wear protection and oil consumption control.

- BENEFITS:**
- Up to 4% fuel economy advantage over conventional SAE 15W-40 viscosity grade oils
 - Longer starter/battery life with reduced dependency on block heaters resulting in lower energy costs
 - Up to 100% increase in oxidation protection compared to conventional CJ-4 engine oils. Always follow OEM recommendations when extending oil drain intervals
 - Reduced air entrainment in high pressure fuel injection systems
 - Addresses the environmental challenge of reducing greenhouse gases and carbon foot print

APPLICATIONS: **RECOMMENDED FOR:**
API CK-4, CJ-4, CI-4 PLUS, CI-4, CH-4
Caterpillar ECF-3
Cummins CES 20086
Detroit Diesel DFS 93K222
Volvo/Mack/Renault – VDS-4.5/EOS-4.5/RLD-4
Mercedes 228.31
Navistar
Ford WSS-M2C171-F1 (5W-40 Only)

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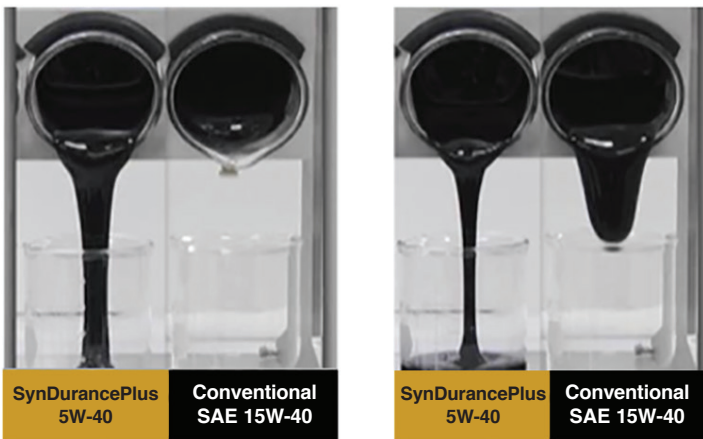
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TYPICAL PROPERTIES:

CITGO CITGARD® SYNDURANCE® PLUS SYNTHETIC HEAVY DUTY ENGINE OILS

	5W-30	5W-40
Material Code	622676001	622677001
Gravity, ASTM D 4052, °API	33.6	33.8
Pounds Per Gallon	7.14	7.14
Flash Point, COC, ASTM D 92, °F (°C)	428 (220)	453 (234)
Viscosity, ASTM D 445, cSt at 40°C	70	88
cSt at 100°C	11.3	14
Viscosity Index, ASTM D 2270	156	163
CCS Vis, ASTM D 5293, cP at °C	6,400@ -30° C	6,350 at -30°C
MRV Vis, ASTM D 4684, cP at °C	21,970 at -35°C	30,060 at -35°C
MRV Yield Stress, ASTM D 4684, Pa at °C	<35	<35
Pour Point, ASTM D 97, °F (°C)	-38°F (-39°C)	-44°F (-42°C)
TBN (Total Base No.), ASTM D 2896	11	11
Color, ASTM D 1500	L5.5	L5.5
NOACK Volatility, ASTM 05800, % Loss	11.5	11.9

Low Temperature Pumpability Comparison
How much wear occurs waiting on 15W-40?



3 seconds

7 seconds

Cold box testing at -22°F (-30°C) of used oil demonstrates the superior flow characteristics of SynDurance Plus Synthetic 5W-40

Fuel Savings Advantage

Savings Category	Conventional 15W-40	CITGARD® SynDurance® PLUS 5W-30	Savings*
Number of Units	100	100	
Annual Miles/Unit	100,000	100,000	
MPG	6.50	6.68	
Fuel Savings % Increase	None	3.00	
Fuel Cost	2.00	2.00	
Annual Unit Fuel Gallons	15,384	14,970	414
Annual Unit Fuel Cost	\$30,768	\$29,940	\$828
Fleet Annual Fuel Gallons	1,538,400	1,497,000	41,400
Total Savings Including Cost of Oil			\$82,800

*Savings is example only—Individual fleet result will vary

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