

CITGO CITGARD[®] SYNDURANCE[®]
SYNTHETIC ENGINE OIL SAE 5W-40



Date 10/06

DESCRIPTION: The design of CITGO CITGARD SynDurance Engine Oil SAE 5W-40 utilizes premium synthetic base stocks to improve high and low temperature properties. Poly-alpha olefin synthetic components (PAOs) give the best low temperature performance while minimizing volatility. The careful balance of synthetic components gives improved fuel economy, improved cold temperature performance and improved engine drain interval optimization capabilities.

The industry faces continuing challenges with new emission regulations. The advanced additive approach used in CITGARD SynDurance addresses the engine needs of the future, including Heavy Exhaust Gas Recirculation (EGR) systems, Diesel Particulate Filters (DPF's), and Diesel Oxidation Catalyst (DOC's).

CITGARD SynDurance is designed to exceed the performance requirements of API CJ-4 and engine manufacturers' specifications.

**PERFORMANCE
BENEFITS:**

- Promotes fuel savings
- Provides year-round engine protection for fleets operating in wide temperature conditions
- Permits quick-fill lubrication flow during cold weather start-up
- Exhibits excellent high temperature wear protection
- Eliminates seasonal changeover and inventory problems when going from SAE 10W-30 in winter to 15W-40 in the summer
- Helps avoid engine damage from using cold weather starting aids such as ether
- Reduces dependency on engine block heaters
- Provides drain interval optimization capability
- Promotes longer engine life
- Improves equipment productivity and service availability

**RECOMMENDED
FOR:**

<p>Equipment recommending CJ-4, CI-4 PLUS, API CI-4, CH-4, CG-4, API SM, SL, SJ (gasoline engines) Caterpillar ECF-3, ECF-1 Cummins CES 20076, 20071 and 20081 Detroit Diesel 93K214, 93K215, 93K218</p>	<p>Mack EO-O Premium Plus (07) Mack EO-N Premium Plus (03) and EO-M Plus ACEA E3 and E5 performance Daimler Chrysler 228.3 Volvo VDS-3, VDS-4</p>
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APPLICATIONS:

CITGARD SynDurance 5W-40 is ideal for engines operating in a wide temperature range, thereby avoiding the use of SAE 10W-30 in winter and changing to 15W-40 during summer months. Examples of such extreme service applications include emergency vehicles, vehicles with frequent cool down/restart cycles, refrigeration, generator sets, and standby engines.

TYPICAL PROPERTIES:**CITGO CITGARD® SYNDURANCE® SYNTHETIC ENGINE OIL**

SAE Grade	5W-40
Material Code	622675001
Gravity, ASTM D 4052, °API	33.9
Pounds Per Gallon	7.13
Flash Point, COC, ASTM D 92, °F (°C)	446 (230)
Viscosity, ASTM D 445, cSt at 40°C	96
cSt at 100°C	15.7
Viscosity Index, ASTM D 2270	174
CCS Vis, ASTM D 5293, cP at °C	5,800 at -30°C
MRV Vis, ASTM D 4684, cP at °C	18,200 at -35°C
MRV Yield Stress, ASTM D 4684, Pa at °C	<35
Pour Point, ASTM D 97, °F (°C)	-33°F (-36°C)
TBN (Total Base No.), ASTM D 2896	10
Color, ASTM D 1500	4.5