

CITGO® CITGARD® 700

Synthetic Blend Heavy Duty Engine Oils



OVERVIEW



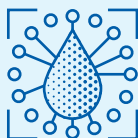
- Synthetic blend engine oils that deliver the performance needed for newer engine designs, while improving performance in older engines.
- Engineered with proprietary additive technology that protects engines running at higher operating temperatures and fuel injection pressures, while meeting tighter wear limits and lower emission requirements.
- SAE 10W-30 grade assists in attaining the new Phase II fuel efficiency standards by improving fuel economy, increasing cold startup lubrication, and providing superior engine durability.

FEATURES & BENEFITS



- SAE 10W-30 offers up to 3% fuel economy advantage over conventional SAE 15W-40 viscosity grade oils.
- Maintain viscosity over extended service drain intervals.
- Up to 100% increase in oxidation protection compared to conventional CJ-4 engine oils.
- Advanced wear protection in both older and newer engines.
- Reduced air entrainment in high-pressure hydraulic fuel injection systems.
- Always follow OEM recommendations when extending oil drain intervals.

APPLICATIONS



- Recommended for superior performance for commercial trucks, agricultural equipment, construction equipment, stationary engines, and other diesel-fueled engine applications including Caterpillar ECF-3, Mercedes 228.31, MAN M3575, MTU Category 2.1, Paccar, Navistar, and Allison TES-439 (15W-40 only).
- Note: Use of diesel engine oils in automotive gasoline engines can shorten the life of catalytic converters.
- Refer to equipment owner's manual for proper lubricant recommendation.

Approved for equipment requiring:

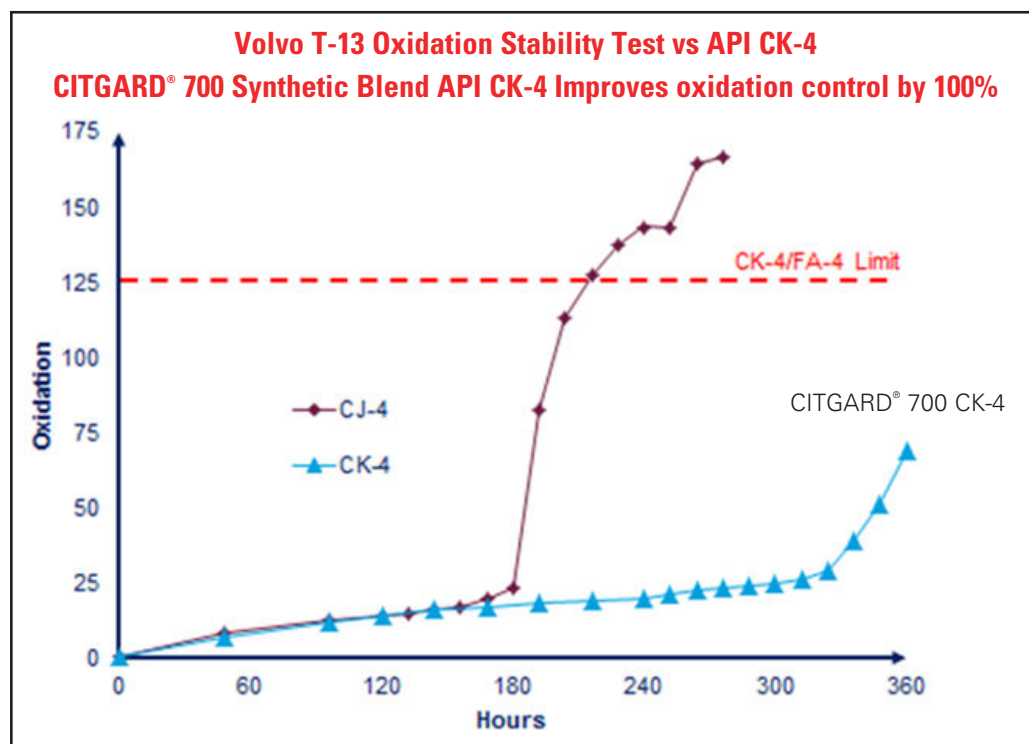
API CK-4, CJ-4, CI-4 Plus, CI-4, CH-4/SN (SN applies to 15W-40 only)
Cummins CES 20086
Detroit Diesel DFS 93K222
Volvo/Mack/Renault VDS-4.5/EOS-4.5/RLD-3
Ford WSS-M2C171-F1

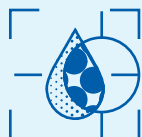
APPLICATIONS



API Comparison Chart

Category	CITGARD® 700 Synthetic Blend API CJ-4	CITGARD® 700 Synthetic Blend API CK-4
Back serviceable	YES	YES
Viscosity grades	15W-40/10W-30	15W-40/10W-30
Fleet million mile engine test rating	Better	Best
100% improved oxidation stability	NO	YES
Greater shear stability vs. conventional API CJ-4	YES	YES
Aeration control vs. conventional API CJ-4	Better	Best
SAE 10W-30 sustains improved fuel economy through 50,000 miles	Better	Best
Compatible with conventional API CJ-4 oils	YES	YES
Best Overall Performance and Backward compatibility	Better	Best



PROPERTIES**Typical Properties for CITGO CITGARD 700 Synthetic Blend Heavy Duty Engine Oils:**

SAE Grade	10W-30	15W-40
Material Code	622721001	622723001
Gravity, ASTM D4052, °API at 60°F	31.6	30.5
Pounds/Gallon at 60°F	7.25	7.30
Specific Gravity at 60°F	0.87	0.88
Viscosity ASTM D445		
cSt at 40°C	80.9	111.9
cSt at 100°C	11.9	15.2
Viscosity Index	142	141
CCS Viscosity, cP, @ Temperature	6,159 @ -25°C	4677 @ -20°C
MRV Viscosity, cP, @ Temperature	23,250 @ -30°C	19,968 @ -25°C
MRV Yield Stress, Pa, @ Temperature	<35	<35
Pour Point, °F (°C)	-38 (-39)	-33 (-36)
Flash Point, COC, °F (°C)	435 (224)	439 (226)
Noack Evaporative, ASTM D5800, % Loss	12.0	11.0
Color, ASTM D1500	L3.0	L3.5
Total Base Number, ASTM D2896	10	10
Sulfated Ash, ASTM D874, % wt	1.0	1.0

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