



Premium Plus Synthetic Blend Heavy Duty Engine Oils

STARFIRE Premium Plus Synthetic Blend Heavy Duty Engine Oils are specially engineered for heavy duty diesel and gasoline engines operating under all service conditions, including today's emission-controlled engines with EGR and diesel particulate filters using Ultra-Low Sulfur Diesel fuel (ULSD) and Low Sulfur Diesel (LSD). They provide extra protection and performance compared with conventional engine oil formulations, with excellent oxidation control and soot suspension characteristics to provide outstanding protection for extended drain intervals.

APPLICATIONS

This next-generation low-ash technology provides improved wear protection, deposit and soot control, and improves oil consumption by neutralizing combustion by-products that cause harmful deposits. **STARFIRE Premium Plus Synthetic Blend Heavy Duty Engine Oils** provide extended drain capabilities that prevents viscosity loss from shearing and reduces friction, leading to longer engine life and improved fuel economy. Its high film strength makes **STARFIRE Premium Plus Synthetic Blend Heavy Duty Engine Oils** are suitable for both on and off-road driving conditions. It can be recommended for all new engines requiring CK-4 fluid and are backward compatible with API CJ-4, CI-4 PLUS, CI-4, and CH oils.

STARFIRE Premium Plus Synthetic Blend Heavy Duty Engine Oils are API licensed and have OEM approvals from Cummins, Detroit Diesel, Mercedes Benz, Volvo, Mack and Renault.

RECOMMENDATIONS

- Mack EOS-4.5, EO-O Premium Plus, EO- N premium Plus 03, EO-M Plus, and prior
- Ford WSS-M2C171-F1, WSS-M2C171-E
- GLOBAL DHD-1
- Detroit Diesel 93K222, 93K223
- Cummins CES 20086, 20087
- Caterpillar ECF-3, ECF-2, ECF-1a
- API CK4, CJ4, CI4
- API FA-4 (10W30)
- Mercedes-Benz 228.3, 228.31
- Man 3575, 3275, 270
- MTU 2.1, Type I, Type II
- Volvo VDS-4.5
- ACEA E7-22 & ACEA E11-22
- JASO DH-2
- Allison C-4
- Caterpillar TO-2
- CID A-A-52306, MIL-PRF-2104G

SAE GRADE	TEST METHOD	15W-40	10W-30
Viscosity: cSt @ 40°C cSt@100°C	D445	116.1 15.66	77.7 11.31
Viscosity Index	D2270	143	136
Pour Point, °F	D97	-36 (-33)	-39 (-38)
Flash Point (COC), °F	D92	224 (435)	220 (428)
Neutralization NO., TBN-E	D2896	10	10
Sulfated Ash, WT.%	D874	0.99	0.99
Cold Crank Simulator, cP	D5293	5398/-20°C	6270/-25°C
Pumping Viscosity, cP	D4684	21,600/-35°C	23,000/-30°C
HTHS Vis @ 150°C, cP	D5481	4.3	3.5