

500 ECO 5000™ SAE 15W-40

Eco 5000™ SAE 15W-40 is a premium quality, para-synthetic, heavy-duty diesel engine oil that is formulated with highly re-refined Group II base oils. Re-refined base oils produce less greenhouse and toxic emissions, consume less energy, and reduce the demand for crude oil which lowers the carbon footprint of Eco 5000™ SAE 15W-40.

Eco 5000™ SAE 15W-40 fulfills Federal directives and mandates for governmental agencies to use recycled/recovered materials including Executive Order 13423; Section 6002 of RCRA and CFR48Subpart 23.4.

Eco 5000™ SAE 15W-40 exceeds the requirements for API heavy-duty diesel engine oil Service Categories: CK-4, CJ-4, CI-4, CI-4 Plus and older. The product is particularly suitable for use in emission compliant engines that utilize heavy EGR and exhaust after-treatment devices such as Diesel Particulate Filters (DPFs) with or without Diesel Oxidation Catalysts (DOCs) and Selective Catalytic Reduction (SCR). Eco 5000™ SAE 15W-40 also provides advanced performance in low- emission certified diesel engines that are equipped with EGR, older non-EGR containing diesel engines, and off-highway diesel engines.

ECO 5000™ SAE 15W-40 is blended from a unique combination of the finest quality, polyalphaolefin (PAO) synthetic, virgin and re-refined Group II Plus base oils and additives to provide the following advantages:

- **PERFORMANCE**
 - Superior cold weather starting due to lower cold-cranking and oil pumpability temps.
 - Excellent shear stability for 'stay-in-grade' performance throughout the entire oil drain.
 - Improved engine durability and reliability which leads to increased engine life, especially for older model engines, and reduced maintenance costs due to reduced downtime.
 - Improved fuel economy

- **DEPOSIT PROTECTION**
 - Exceptional thermal and oxidative stability for outstanding performance.
 - Excellent soot dispersancy for protection against soot overloading, increases in viscosity due to soot thickening and soot abrasive wear
 - Enhanced detergency to provide high temperature piston cleanliness and protection against bore polishing and scuffing
 - Increased engine cleanliness
 - Excellent protection against low temperature sludge build-up and high temperature deposits
 - Excellent low volatility characteristics that provide exceptional oil consumption control and prevent deposit formation on critical engine parts.
 - Superior soot busting capabilities to prevent soot build-up and agglomeration

- **WEAR PROTECTION**
 - Exceptional valve-train wear protection, especially during high soot conditions
 - Superb resistance to corrosive and abrasive wear
 - Excellent protection against acidic corrosion of vital engine components
 - Exceptional ring and liner wear protection which provides improved oil consumption control

- **EXTENDED OIL DRAINS**

- Based on OEM and used oil analysis recommendations
- Excellent TBN retention and reserve for effective acid neutralization throughout the entire oil drain interval
- Longer drain intervals for lower overall maintenance costs
- Superior low volatility characteristics to control oil consumption.
- Longer filter life, especially at high soot levels for better engine protection

Further blended into Eco 5000™ SAE 15W-40 are two proven frictional modifiers, Micron Moly®, a liquid soluble type of moly, and Schaeffer Manufacturing's own proprietary additive Penetro®. Once plated, these frictional modifiers form a long lasting, slippery, tenacious lubricant film, which prevents metal-to-metal contact and damaging frictional wear.

Eco 5000™ 15W40 meets and exceeds the following manufacturers' specifications and requirements: API Service Classifications CK-4/CJ-4; Military Specification MIL-PRF-2104K; ACEA E7-16; ACEA E9-16; Global Specification DHD-1; Caterpillar ECF-3; Cummins CES 20081, CES 20086; Detroit Diesel Power Guard Oil Specifications: DDC93K218 and DDC93K222; Deutz DQC III-10 LA; Ford WSS-M2C171-E, WSS-M2C171-F1; JASO DH-2; Mack EO-O Premium Plus, Mack EOS-4.5; MAN 3275, MAN 3575; MB 228.3; MB 228.31; MTU Category Type 2 and 2.1; Renault VI RLD-3, RLD-4; Scania LDF-2; Volvo VDS 4, VDS 4.5; Navistar; John Deere; CHN (Case-New Holland).

TYPICAL PROPERTIES

SAE Grade

Specific Gravity @ 60°F/15°C	15W-40 0.87 – 0.88
Viscosity @ 40°C cSt (ASTM D445)	95 – 110
Viscosity @ 100°C cSt (ASTM D445)	14.00-15.50
CCS Viscosity @ -20°C cP (ASTM D5293)	6,000
Mini-rotary Viscosity TP-1 @ -25°C cP (ASTM D4684)	20,000
High Temperature High Shear Viscosity 302°F/150°C cP	4.0
Viscosity Index (ASTM D2270)	150
Flash Point °F/°C (ASTM D92)	440°/221°
Fire Point °F/°C (ASTM D92)	490°/254°
Pour Point °F/°C (ASTM D97/D5950)	-38°/ < -39°
Sulfated Ash Content % Wt. (ASTM D874)	0.951
Total Base Number (ASTM D2896)	10
NOACK Volatility (ASTM D5800)	
% Evaporation Loss @ 250°C	10.15%
Shear Stability % Viscosity Loss – 90 Passes (ASTM D7109)	9.9%
Foam Test (ASTM D892 Option A)	
Sequence I	0/0
Sequence II	0/0
Sequence III	0/0
High Temperature Foam Test (ASTM D6082 Option A)	0/0
Sequence IIIG	
% Viscosity Increase @ 40°C EOT	75%