PRODUCT NAME: LA 345E ULTRA-PREMIUM DIESEL FLEET ENGINE OIL
SAE VISCOSITY: 10W-40
MAJOR RATINGS: ACEA E9-16 API CK-4

DESCRIPTION

Ultra-Premium performance long drain (extended service interval) Diesel Fleet Engine Oil exceeding ACEA E9, API CK-4 and Euro 6 specification requirements.
Enhanced fuel conserving properties*, exhaust after treatment device protection and exceeds manufacturer engine component and turbocharger wear limits.
Specifically formulated to perform in modern European, US and Japanese heavy duty diesel engines.

PRODUCT APPLICATION

LA 345E 10W-40 provides increased component protection and performance in modern long-haul transport vehicles requiring low SAPS for advanced diesel exhaust and particulate filter protection. Formulated to perform in European heavy duty truck engines requiring extended service interval, including their US equivalents. LA345E provides backwards compatibility for vehicles requiring Euro 5 and 4 performance levels.

INNOVATIVE SYNTHETIC FORMULA

LubeAlloy Specialised Lubricants proprietary blend of *PAES-SYN*™ synthetic base oils, are formulated to enhance engine life and durability whilst exceeding OEM requirements.

GREATER FRICTIONAL PERFORMANCE

In a bearing subjected to a high sliding velocity, reducing the dynamic viscosity produces a more consistent hydrodynamic film that is highly resistant to mechanical shear, *effectively reducing friction between sliding and bearing surfaces.

WEAR PROTECTION

The combination of *PAES-SYN*™ base oils and highly advanced additive technology utilised in LA 345E overcomes potential problems of low 'High Temperature/High Shear' levels in lower viscosity oils. This provides a resilient oil film to protect internal engine and turbocharger components from wear maintaining peak engine longevity.

FUEL EFFICIENCY

Low coefficient of friction properties of *PAES-SYN*™ base oils and requirements for OEM specific chemistry, results in maximum reduction of engine internal friction, providing fuel economy benefits.

EXHAUST AFTER-TREATMENT DEVICE COMPATIBILITY

Advanced chemistry, with reduced Sulphated Ash, Phosphorous and Sulphur levels, maintains full compatibility with Diesel Particulate Filters (DPF) resulting in lower emissions and longer after-treatment device component life.

ADVANCED SOOT CONTROL

The advanced dispersant chemistry guarantees that soot generated in the combustion process is held in suspension and separate in the oil, extending service life of the oil whilst maintaining stable viscosity.

THERMAL AND OXIDATION STABILITY

The innovative technology of *PAES-SYN*™ base oils effectivelyreduces operating temperature, viscosity loss and oil consumption.
This superior oxidation stability of *PAES-SYN*™ base oils effectively:

FEATURES & OPERATIONAL BENEFITS

FEATURES	ADVANTAGES AND OPERATIONAL BENEFITS
• Decreases oil acidity	
• Significantly reduces varnish deposits on 'hot' metal surfaces of pistons and turbochargers	
• Eliminates sludge deposits formed by oil-insoluble polymers when mixed with unburned fuel, water and reactive metals	
• Prevents rapid additive depletion	
• Maintains viscosity over longer service intervals	

SPECIFICATIONS AND PERFORMANCE REQUIREMENTS

ACEA E9-16 / E7-12	JASO DH-2
API CK-4/SN	Mack EO-O Premium Plus / EOS-4.5
Caterpillar ECF-3	MAN M3477
Cummins CES 20086	MTU 3.1
DAF Euro VI	Navistar
Daimler Benz MB 228.51	Renault RVI RLD-4
DCD PGOS 93K218	Scania Long Drain
Deutz DQC IV-10LA	Volvo VDS 4 / VDS 4.5

PHYSICAL CHARACTERISTICS

TEST DESCRIPTION	ASTM	TEST RESULT
Description	**Visual**	**Copper/Red**
Viscosity Grade	SAE	10W-40
Viscosity, cSt @ 40°C	D-445	83.58
Viscosity, cSt @ 100°C	D-445	14.41
Viscosity Index	D-2270	176
Density @ 15°C, kg/L	D-4052	0.806
Total Base Number (TBN), mg KOH/g	D-2896	8.9
HTHS Viscosity @ 150°C, cPa	D-4683	4.2
Cold Crank Viscosity, mPa.s @ -25°C	D-5293	4,765
Pour Point, °C	D-5950	-45
Flash Point (COC), °C	D-92	252
NOACK Volatility, Evaporative Loss @ 250°C	D-5800	9.24%
Sulphated Ash, mass wt%	D-874	0.928

Health and Safety: This product is not expected to cause health concerns when used for the intended application and according to the recommendations in the Material Safety Data Sheet (MSDS).