



SPECIALISED LUBRICANTS

PRODUCT NAME: LA 346E DIESEL ENGINE OIL

SAE VISCOSITY: 10W-40

MAJOR RATINGS: API CI-4 PLUS/SL ACEA E7-16



DESCRIPTION

Ultra-Premium performance extended drain heavy duty diesel (HDD) engine oil recommended for ACEA E7-16, API CI-4 PLUS four stroke EGR motors. Enhanced durability protection, fuel conserving, turbocharger and wear protection in US, European and Japanese HDD group performance motors.

PRODUCT APPLICATION

LA 346E SAE 10W-40 ACEA E7-16 is specially formulated for HUEI (hydraulic/electronic unit injection) controlled diesel engines, including those fitted with CEGR motors. LA 346E meets the stringent test requirements for all EPA 2002 compliant engines utilising Cooled Exhaust Gas Recirculation (CEGR) systems and protects against NOx (Nitric Oxide) ingestion in the lubricating oil. LA 346E provides enhanced protection of bearing and valve train wear for worldwide engine specifications.

ADVANCED SYNTHETIC FORMULA

LubeAlloy Specialised Lubricants proprietary blend of *PAES-SYN*TM 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

LA 346E overcomes potential problems of low 'High Temperature/High Shear' levels in lower viscosity oils. The combination of *PAES-SYN*TM base oils and highly advanced additive technology provides a resilient oil film to protect internal engine and turbocharger components.

THERMAL AND OXIDATION STABILITY

*PAES-SYN*TM base oils maintain cooler operating temperatures, minimising viscosity loss and oil consumption. Lower temperature from *PAES-SYN*TM base oils reduce the mechanisms of water, acids and catalyst that induce oxidation rates within the oil.

PROTECTION AGAINST SOOT

LA 346E advanced chemistry protects against CEGR recirculated exhaust from metal corroding acids and soots (partially burned fuel and oil), which induces wear and thickens oil.

FUEL EFFICIENCY

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

FEATURES & OPERATIONAL BENEFITS

FEATURES	ADVANTAGES AND OPERATIONAL BENEFITS
Excellent low temperature pumpability	Easier engine start-up and reduced wear
Extended TBN reserves	Improved soot handling and extended drain intervals
Friction Modified	Assist in improving fuel efficiency
Excellent oil consumption control	Lower oil costs due to less top-up oil during operation
Outstanding thermal and oxidation stability	Reduced low temperature sludge build-up and high temperature deposits
Superb resistance to corrosion	Longer life of critical wear surfaces
Stay-in-grade shear stability	Reduced oil consumption and wear protection. Maintains viscosity in extended, severe and high temperature service
Highest engine component protection	High lubricity across metal components due to PAES-SYN formulation

SPECIFICATIONS & APPROVALS

API: CI-4 PLUS/SL	DEUTZ: DQC III-0
ACEA: E7-16	GLOBAL: DHD-1
CATERPILLAR: ECF-2	JASO: DH-1
CUMMINS: CES 20078	MACK: EO-N
DETROIT DIESEL: DFS93K215	MAN: M3275
MB: 228.3	MTU: Type 2
RENAULT Truck: RLD-2	VOLVO: VDS 3

BACKWARD COMPATIBILITY

API: CH-4/SL, CG-4/SJ	ACEA: E2-96
CATERPILLAR: ECF-1a	CUMMINS: 20077/20076
DETROIT DIESEL: 93K214	MACK: EO-M Premium Plus
MB: 228.1	VOLVO: DS-2

PHYSICAL CHARACTERISTICS

TEST DESCRIPTION	ASTM	TEST RESULT
Description	Visual	Clear/Amber
Viscosity Grade	SAE	10W-40
Viscosity, cSt @ 40°C	D-445	90.75
Viscosity, cSt @ 100°C	D-445	14.91
Viscosity Index	D-2270	178
Density @ 15°C, kg/L	D-4052	0.864
Total Base Number (TBN), mg KOH/g	D-2896	10.23
HTHS Viscosity @ 150°C, cPa	D-4683	3.69
Cold Crank Viscosity, mPa.s @ -25°C	D-5293	4,605
Pour Point, °C	D-5950	-45
Flash Point (COC), °C	D-92	250
NOACK Volatility, Evaporative Loss @ 250°C	D-5800	4.68%

Typical formulation specifications at time of production, minor variations may occur.

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).