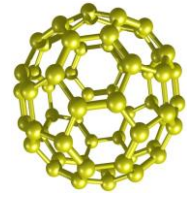




IXD HEAVY DUTY DIESEL ENGINE OIL



Fortified With
Bardahl Fullerenes
Technology

BARDAHL HIGH PERFORMANCE HEAVY DUTY DIESEL ENGINE OIL – SAE 15W-40 (API CI-4/SL)

PRODUCT DESCRIPTION

Bardahl Heavy Duty IXD engine oil SAE 15W40 CI4/SL is a high performance heavy duty engine oil with outstanding protection properties. Providing excellent wear protection and long oil life in Euro 4, Euro 3 and other advanced engines. Specially selected additives package improves engine cleanliness and protection against piston deposits, enabling the engine oil to exceed the demanding requirements of most OEMs. It is formulated with premium base stocks and Bardahl Fullerenes Technology which exhibits excellent stay-in-grade characteristics and always maintains a strong oil film that minimizes metal-to-metal contacts.

This multi-grade lubricant is recommended for a wide range of engines, from passenger cars, light commercial vehicles, trucks, buses to off-road services such as construction, mining and forestry machinery. It is suitable for both diesel and gasoline powered engines that operate under extreme conditions. This product is especially suited for vehicles fitted with EGR (Exhaust Gas Recirculation) system.

Bardahl Fullerenes Technology

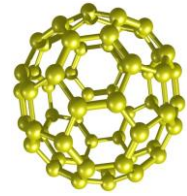
Normal engine oils, anti-wear and anti-friction additives form a single layer of protection that can be broken under high load and high stress applications. Bardahl Fullerenes Technology offers added layer of protection to shield engine components against friction and wear. It uses Bardahl Fullerene molecules to create an extra protective layer of hard particles on engine surfaces and prevent direct surface-to-surface contact. Being spherical in shape, Bardahl Fullerene molecules act as nano ball bearings, allowing surfaces to glide over one another with minimal friction and wear.

Advantages

- Excellent stay-in-grade stability ensures viscosity integrity and reduces oil consumption.
- Reduce maintenance costs by maximizing oil drain and engine overhaul periods.
- Outstanding engine cleanliness.
- Excellent sludge and varnish deposit control.
- Protects against rust and corrosion.
- Extraordinary oxidation and thermal stability.
- Fully compatible with conventional mineral motor oils and other synthetic engine oils.



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Applications

- Highly recommended for diesel and gasolines; including EGR (Exhaust Gas Recirculation), naturally aspirated or turbocharged where either an API CI-4, CH-4, CG-4, CF-4, CF or SL grade of oils are specified.
- Suitable for many on-and off-highway applications in engines manufactured by Cummins, Detroit, Caterpillar, Mack, Renault, Volvo and others.
- Suitable for use on engines using either low or high-sulphur diesel fuels.

Performance Standards

API CI-4/CH-4/SL	MAN 3275	Volvo VDS-3	Mack E0-M Plus
ACEA E7-08	MB p228.3	Cat ECF-1	Detroit Diesel 93K215
ACEA A3/B4-08	MTU Type II	Cummins CES 20072/20077	

Typical Properties

SAE GRADE	15W-40
Density, kg/litre@15°C	0.8790
Colour ASTM	3.0
Kinematic Viscosity, mm ² /s@40°C	110.1
Kinematic Viscosity, mm ² /s@100°C	14.8
Viscosity Index	139
CCS@-20°C, cP	5990
HTHS@150°C, cP	4.2
Pour Point, °C	-27
Flash Point COC, °C	238
Sulphated Ash, %wt	1.2
TBN, mg KOH/g	9.10