



KAPPA DHD

(Diesel, Heavy Duty Engine Oils—12 TBN, API CI-4 Plus)

KAPPA DHD motor oils (multigrades) are top tier heavy duty diesel engine oils designed to meet the most stringent requirements of modern four-cycle, high-output diesel engines and are ideal for exhaust gas recycling (EGR) engines.

KAPPA DHD motor oils are formulated to enable extended oil drain intervals for most engines without the risk of sludge and varnish buildup. (See engine maintenance manual for oil drain extension guidelines.)

These specially formulated multigrade oils have advanced soot dispersancy and high detergency levels, which effectively protect bearings and other engine surfaces from corrosive wear. In addition **KAPPA DHD** oils control ring and piston deposits that lead to oil consumption and wear. Its advanced formulation also minimizes engine wear at cold startup when engines are most susceptible to damage.

KAPPA DHD motor oils exceed Caterpillar requirements for operation using fuels which sulfur content is greater than 0.05% or is unknown. Regardless of fuel sulfur content, users found that **KAPPA DHD** motor oils have enabled longer engine life and trouble-free service.

KAPPA DHD motor oils are recommended for many transmissions. They have been proven to extend transmission life in Caterpillar power shift units, as compared to conventional diesel engine oils.

The 15W-40 grade is ideal for extending drain intervals. Both the OEM recommended guidelines as well as the owner-operator type of service (on road versus off-road, etc) and maintenance practices need to be considered. FINA CHECK (used oil analysis) should always be used when extending drain intervals.

BENEFITS:

- 12 TBN - EFFECTIVELY REDUCES ENGINE WEAR AND CONTROLS DEPOSITS
- EXTENDS OIL DRAIN INTERVALS
- PROVIDES CLEANER ENGINES
- REDUCES OIL CONSUMPTION AND RING BREAKAGE

APPLICATIONS:

KAPPA DHD 15W-40 OIL meets or exceeds the performance requirements of the latest API category CI-4 PLUS, CI-4/SL, Detroit Diesel 93K214 (DDC Power Guard), Mack EO-N Premium Plus 03, Caterpillar ECF-1, ACEA E-5, Global DHD-1, Cummins CES 20078, Mercedes Benz 228.3, and Volvo VDS-3.

KAPPA DHD motor oils are recommended for naturally aspirated or turbocharged or EGR diesel engines and most gasoline engines. These motor oils are also suitable for many transmissions and other applications requiring high quality engine oils.

KAPPA DHD motor oils meet or exceed the following requirements:

- Major OEMs including: Caterpillar, Cummins, Detroit Diesel, John Deere, Mack, MAN, Mercedes Benz, VW and Volvo
- Caterpillar ECF-1
- Detroit Diesel 93K214 (15W-40)
- Mack EO-N Premium Plus 03 (15W-40)
- Allison C-4
- MIL-PRF-2104G



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TYPICAL CHARACTERISTICS

SAE Viscosity Grade	15W-40	15W-50	40
API Service**	CI-4 PLUS, CI-4 CH-4, CG-4 CF/SL CD, CE	CI-4 CH-4, CG-4 CF/SL CD, CE	CF-2 - CF/SL CD, CE
Product Code	11754	11755	11740
API Gravity (ASTM D-1298)	29.2	27.9	28.0
Specific Gravity, g/cc	0.880	0.887	0.887
Viscosity (ASTM D-445):			
cSt @ 40°C	118	141	151
cSt @ 100°C	15.2	18.5	14.8
SUS @ 100°F	579	730	795
SUS @ 210°F	78	94	79
cPs @ -20°C (D-5293)	<7000	<7000	-
Viscosity Index (ASTM D-2270)	133	147	97
Pour Point (ASTM D-97)			
°F (°C)	-25 (-32)	-25 (-33)	5 (-15)
Flash Point, COC (ASTM D-92)			
°F (°C)	420 (216)	403 (206)	450 (232)
Color (ASTM D-1500)	5.5	6.0	6.0
Sulfated Ash (ASTM D-874)	1.4	1.4	1.4
Total Base Number (ASTM D 2896)	12	12	12
Other credentials			
Mack	EO-N Premium Plus 03, EO-N Premium Plus	EO-N Premium Plus, EO-M Plus	-
Mercedes	228.3	228.3	228.0, 228.2
Volvo VDS 3 and VDS 2	yes	yes	-
Detroit Diesel	93K214	MTU Type 2	MTU Type 2 series 2000, 4000
Cummins CES 20078, 20076	yes	yes	-
ACEA	E2/E3/E5/B3/A2	E2/E3/E5/B3/A2	-
MAN (Mining & Marine)	MAN 271, 3275	MAN 271, 3275	270
VW	501, 505	501, 505	-

** All grades contain the same performance additive. API credentials vary due to API restrictions. EO-N Premium Plus 03 is restricted by Mack to only the 15W-40 grade. Caterpillar ECF-1 is limited to a maximum of 1.50% ash.

The above data is subject to usual manufacturing variation. For more information or availability, call 1-800-442-LUBE.

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