

# MAK DH-1 15W-40

Heavy duty diesel engine oil for modern construction and earthmoving equipment

MAK DH-1 15W-40 is a heavy duty diesel engine oil blended from highly refined high viscosity index Group II plus base stocks and a superior additive chemistry. This oil has been specially formulated to provide reliable performance in a wide variety of heavy duty, high powered turbocharged diesel engines. MAK DH-1 15W-40 offers engine durability where Exhaust Gas Recirculation is used and protects after treatment devices. MAK DH-1 15W-40 engine oil exhibits superior performance in wear prevention, high-temperature oxidation stability, piston deposit control and soot control. This oil has good shear stability and maintains its viscosity even under high temperature and high shear conditions.

#### Applications:

MAK DH-1 15W-40 engine oil is recommended for use in engine lubrication of modern construction & earthmoving equipment and specially recommended for L&T Komatsu range of excavators. It can also be used in other heavy duty diesel engines in mining equipment, on-highway trucks, tractors and power generators. MAK DH-1 Series is a high performance oil that in-addition to meeting JASO standard for construction machinery and automobiles engines also meets Komatsu's original quality standards (KES). Be guided by OEM's recommendation for oil drain.

#### Performance/ Benefits:

**Excellent Thermo-Oxidative Stability** – enhanced high temperature oxidation and thermal stability offers superior protection to the engine oil at high temperatures increasing the life of oil.

**Enhanced Engine Protection** – provides excellent wear protection to valve train and critical components over a wide range of operating temperatures. Extends engine life.

**Handles Higher Soot Levels** – excellent capability to handle higher soot levels that occur in engines fitted with EGR technology. Controls oil thickening and increases engine oil filter life.

**Long Service Life** – formulated with high quality Group II Plus base oils which possess low volatility thereby reduces oil consumption/top-ups.

**Deposit Control** – helps prevent oil thickening and formation of harmful deposits in many areas of engine such as the oil sump and piston liner areas.

**Excellent Shear Stability** – ensures viscosity control at high temperatures & high shear conditions thereby providing maximum protection.

#### Performance Level/ Specification:

Meets the performance benchmarks of

- JASO DH-1
- API CI-4
- Komatsu Engineering Standard (KES 07.851)

#### Typical Physico-Chemical Data:MAK DH-1 15W-40

Characteristics	Method	Value
SAE Grade	SAE J300	15W-40
Color	Visual	Brown
Appearance	Visual	Clear
Density @29.5°C, g/cc	ASTM D1298	0.860
Kinematic Viscosity @40°C, cSt	ASTM D445	108.8
Kinematic Viscosity @100°C, cSt	ASTM D445	14.5
Viscosity Index	ASTM D2270	137
Copper Corrosion, 100°C, 3 hrs.	ASTM D130	1a
Flash Point, °C	ASTM D92	232
Pour Point, °C	ASTM D97	-27
Foaming Tendency	ASTM D892	
a) Sequence I		Nil / Nil
b) Sequence II		10 / Nil
c) Sequence III		Nil / Nil

#### Storage & Handling:

The product should be stored inside. Keep it properly sealed to avoid contamination. Avoid freezing and store under protected storage conditions.

#### Health & Safety:

It is unlikely to be hazardous when properly used in recommended applications. Contamination of the oil from other oils, greases, chemicals, dirty water etc. can occur during the use. It should be avoided. Regular monitoring of the in-use product is recommended.