

# MAK MULTIGRADE 20W-40

High performance heavy duty multigrade diesel engine oil

MAK Multigrade 20W-40 is a high quality multigrade diesel engine oil blended with superior quality high viscosity index base oil and well balanced group of additives to provide high detergency, dispersancy and anti-oxidation characteristics. This oil is formulated to perform under the most stringent operating conditions of heavy duty diesel engines and offers outstanding protection against oil degradation, oil thickening and corrosion. It has good shear stability and maintains its viscosity under high shear, high temperature conditions. MAK Multigrade 20W-40 provides the highest level of protection for relatively older diesel engines, large or small, non-turbocharged or turbocharged diesel engines.

#### Applications:

MAK Multigrade 20W-40 is recommended for use in heavy duty commercial vehicles, light commercial vehicles, multi-utility vehicles, tractors, 3 wheelers, gensets etc. fitted with high speed naturally aspirated or turbo charged diesel engines operating at low speed and high torque conditions prevalent in prolonged city stop and go driving conditions and also in hilly regions. Alternatively be guided by OEM's recommendation for oil drain period.

#### Performance/ Benefits:

**Resistance to Oxidation and Thermal Degradation** – enhanced high temperature oxidation stability offers superior protection to the engine oil at high temperatures and controls sludge build-up and deposits formation in the engine. Extends oil life.

**Enhanced Engine Life** – superior wear protection characteristics of the oil provides improved protection to various critical engine parts such as cylinder liner, piston rings & valve, cams etc. over wide range of operating temperature. Extends engine life and reduces maintenance cost.

**Engine Cleanliness** – advanced detergent-dispersant additive technology provides improved engine cleanliness and ensures consistent high performance of the engine.

**Multigrade Performance** – multigrade viscosity is designed to provide easy engine start-up and minimal start-up wear along with protection in high temperature conditions.

**Excellent Shear Stability** – ensures viscosity control at high temperatures and high shear conditions. Provides protection to the components.

**Good TBN Retention** – excellent protection against corrosive wear of engine components due to high TBN retention capacity over the oil life.

#### Performance Level/ Specification:

Meets the performance benchmarks of

- API CF/SF

#### Typical Physico-Chemical Data: MAK Multigrade 20W-40

Characteristics	Method	Value
SAE Grade	SAE J300	20W-40
Color	Visual	Red
Appearance	Visual	Clear
Density @29.5°C, g/cc	ASTM D1298	0.858
Kinematic Viscosity @40°C, cSt	ASTM D445	117.7
Kinematic Viscosity @100°C, cSt	ASTM D445	14.10
Viscosity Index	ASTM D2270	120
Copper Corrosion, 100°C, 3 hrs.	ASTM D130	1a
Flash Point, °C	ASTM D92	236
Pour Point, °C	ASTM D97	-21
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.