Product Data Sheet

MAK AUTO XL 15W-40

Premium multigrade heavy duty diesel engine oil for 4 stroke Auto Rickshaws

MAK AUTO XL 15W-40 is a heavy duty diesel engine oil specially designed for lubrication of 4 stroke Auto Rickshaws running on diesel fuel. This oil is blended from highly refined high viscosity index Group II plus base stocks and appropriate additive chemistry. It offers outstanding oxidation stability, excellent anti-wear performance, engine cleanliness and protection for rust and corrosion. It provides excellent lubrication to the engine components under challenging operating environments. MAK AUTO XL 15W-40 provides longer engine life and reduced maintenance cost. This oil has good shear stability to control viscosity under high shear, high temperature operations.

Applications:
MAK AUTO XL 15W-40 is suitable for use in 4-stroke diesel engines fitted to auto rickshaws manufactured by OEMs like PIAGGIO, BAJAJ, MAHINDRA etc. This oil is also suitable for diesel engines requiring engine oils with performance specification such as API CF-4, CF and CD. Be guided by OEM's recommendation for oil drain period.

Performance/ Benefits:
Resistance to Oxidation and Thermal Degradation – enhanced high temperature stability offers superior protection for the engine oil at high temperatures and controls sludge build-up and deposits formation.

Enhanced Engine Life – provides improved wear protection to critical components like cylinder liner, piston rings, valves, cams and other engine parts over wide range of operating temperatures. Enhances engine durability and reliability.

Engine Cleanliness – carefully selected balanced combination of detergency and dispersancy additives provides improved engine cleanliness and prevents the formation of harmful deposits in the engines.

Multigrade Performance – multigrade viscosity is designed to provide easy engine start-up and minimal start-up wear.

Excellent Shear Stability – ensures viscosity control at high temperatures and high shear conditions. Provides wear protection over a wide temperature range.

Good TBN Retention – possess very good TBN retention properties over the entire oil life. Offers excellent protection against corrosive wear of engine components.

Reduced Oil Consumption – formulated with high quality base oils which possess lower volatility helps to ensure minimal oil consumption/top-ups.

Performance Level/ Specification:
Meets the performance benchmarks of

- API CF-4

Typical Physico-Chemical Data: MAK AUTO XL 15W-40

Characteristics	Method	Value
SAE Grade	SAE J300	15W-40
Color	Visual	Brown
Appearance	Visual	Clear
Density @29.5^{O}C, g/cc	ASTM D1298	0.868
Kinematic Viscosity @40^{O}C, cSt	ASTM D445	108.2
Kinematic Viscosity @100^{O}C, cSt	ASTM D445	14.30
Viscosity Index	ASTM D2270	135
Copper Corrosion, 100^{O}C, 3 hrs.	ASTM D130	1a
Flash Point, ^{O}C	ASTM D92	228
Pour Point, ^{O}C	ASTM D97	-24
Foaming Tendency a) Sequence I b) Sequence II c) Sequence III	ASTM D892	 Nil / Nil 10 / Nil 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.

Bharat Petroleum Corporation Ltd.
Product and Application Development Deptt.
BPCL, "A" Installation, Sewree Fort Road, Sewree (East),
Mumbai – 400015 E-mail: MAKcustomercare2@bharatpetroleum.in Tel No.: 022-24176351