SHELL ALEXIA S4

CYLINDER LUBRICANT FOR TWO-STROKE LOW SPEED DIESEL ENGINES

DESIGNED TO MEET CHALLENGES

Shell Alexia S4 is a wide range cylinder lubricant designed for use in all two-stroke low speed diesel engines. Shell Alexia S4 is suitable for use with engines burning distillate and residual fuel and has been engineered to offer excellent performance under all operational conditions such as full power, "slow" and "flexible" steaming regimes. Shell Alexia S4 has been especially formulated to deal with all aspects of Oil Stress. Shell Alexia S4 has been particularly designed for the new generation of highly rated, fuel efficient, low speed marine diesel engines operating with higher pressures, higher temperatures and longer strokes.

PERFORMANCE FEATURES

ENGINE PROTECTION

- Shell Alexia S4 offers outstanding acid neutralising properties which help to prolong the life of components.
- It has superior deposit control and minimises deposit build up on pistons, piston rings, ring grooves, under piston spaces and in cylinder ports.
- Shell Alexia S4 has been engineered to provide enhanced boundary lubrication properties resulting in low cylinder and piston ring wear with typical cylinder wear rates below 0.05 mm per 1000 hours.

OPERATIONAL SIMPLICITY

- Shell Alexia S4 is a single, all purpose lubricant suitable for use with distillate* and all types of residual fuel oil. It will also offer protection from the effects of oil stress under different operating conditions from full power to flexible operation and slow steaming.

MAIN APPLICATIONS

TWO-STROKE LOW SPEED DIESEL ENGINES

- Cylinder lubrication of all types of 2-stroke low speed diesel engines burning distillates* and residual fuel oil from 0.5 – 3.5% sulphur levels.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

APPROVALS

- Shell Alexia S4 is approved for use by all manufacturers of low speed crosshead diesel engines including:
- Wärtsilä
- MAN.

CYLINDER OIL FEED RATES

- Insufficient cylinder oil feed rates can lead to corrosive wear, seized and broken rings and consequent blow-by and scavenge fire risks, and to the formation of excessive deposits.
  Shell Alexia S4 has a BN of 60, but has been used at the same feedrate as a BN 70 cylinder oil in all our field trials.
  To obtain optimum performance with Shell Alexia S4 it is important to:
  – Ensure the lubrication system is well maintained and properly adjusted
  – Use AnalexAlert to analyse used oil and seek advice from Shell's technical experts for advice on how to optimise oil feed rate.

MIXING OF CYLINDER LUBRICANTS

- Shell Alexia S4 is fully miscible with all other cylinder lubricants. However, for optimum performance, Shell Alexia S4 should not be used in conjunction with any other cylinder lubricant.
  For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Help Desk, or the OEM Approvals website.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	S4
Kinematic Viscosity (ASTM D 445) @ 40°C mm ^{2}/s @ 100°C mm ^{2}/s	 165 15.5
Viscosity Index (ASTM D 2270)	>95
Density @ 15°C kg/m ^{3} (ASTM D 4052)	926
Flash Point °C (PMCC) (ASTM D 93)	>210
Pour Point °C (ASTM D 97)	<–6
Total Base Number mg KOH/g (ASTM D 2896)	60
Sulphated Ash % wt (ASTM D 874)	7.5