



Shell ALEXIA S5

Cylinder Lubricant for two-stroke low speed diesel engines

- EXTRA PROTECTION
- HIGH PERFORMANCE

Shell Alexia S5 is a cylinder lubricant designed for use in two-stroke low speed diesel engines running under conditions of high oil stress. It provides additional protection in engines that require a higher performing product and is suitable for use with engines burning residual fuel with Sulphur levels >1.0%. It has been engineered to offer excellent performance under challenging operational conditions such "slow" and "flexible" steaming regimes and very high fuel Sulphur levels.

Shell Alexia S5 utilises Shell's unique triple action technology to give advanced protection for engines experiencing cold corrosion, such as Tier II tuned engines and those retrofitted with turbocharger cut-out, where additional support from the lubricant is required. It has been especially formulated to deal with all aspects of Oil Stress.

Shell Alexia S5 has a BN of 80 and is an SAE50 cylinder oil.

Performance Features and Benefits

- **Engine protection**

Shell Alexia S5 offers excellent acid neutralising properties which helps 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 S5 has been especially designed for more demanding engines and operating conditions, where additional protection from the lubricant is required. Shell Alexia S5 builds on the Shell Alexia S4 technology to extend the portfolio with a product that utilises Shell's unique triple action technology that is designed to give advanced protection for engines experiencing cold corrosion. It is formulated to combat all aspects of oil stress.

Main Applications

- **Two-stroke low speed diesel engines**

Cylinder lubrication of two-stroke low speed diesel engines running under conditions of high oil stress (for example, engines with very long strokes or fitted with turbocharger cut out) and burning residual fuel oil with Sulphur > 1.0%.

For HFO use in the lower Sulphur range, it is recommended that the results from onboard (such as Shell Analex Alert and Shell Onboard+) and onshore used oil analysis (such as Shell RLA) are used, in conjunction with inspections, to determine whether it would be beneficial to switch to Shell Alexia S4. This is particularly important when running under full load conditions, in combination with the lower fuel Sulphur levels.

Specifications, Validations & Recommendations

- **Approvals**

Shell Alexia S5 is undergoing validation trials with the major manufacturers of low speed crosshead diesel engines specifically:

MDT

- Interim NOL issued
- Validation trials ongoing

Wärtsilä

- Validation trials ongoing

- **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.



The feed rate should be determined in accordance with OEM guidelines and should then be further optimised using a combination of onboard analysis (such as Shell Analex Alert and Shell Onboard+) and onshore used oil analysis (such as Shell RLA), in conjunction with engine inspections..

Shell Alexia S5 has a BN of 80 and is an SAE50 viscosity grade.

- **Mixing of cylinder lubricants**

Shell Alexia S5 is fully miscible with all other cylinder lubricants. However, for optimum performance, Shell Alexia S5 should not be used in conjunction with any other cylinder lubricant.

Typical Physical Characteristics

Property		Test Method	Shell Alexia S5	Units
SAE Viscosity Grade			50	
Viscosity Index		ASTM D2270 - IP 226	> 95	
Density	15 °C	ASTM D4052 - IP 365	0.940	kg/l
Flash Point (Closed)	Pensky Martens	ASTM D 93 - IP 34	> 210	°C
Pour Point		ASTM D 97 - IP 15	< -6	°C
BN		ASTM D2896 - IP 276	80	mg/KOH/g
Sulphated Ash		ASTM D874 - IP 163	9.7	% wt

These characteristics are typical of current production.

Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Health, Safety & Environment

- **Health & Safety**

Shell Alexia S5 is unlikely to present any significant health or safety hazard when properly used in the recommended application, and good standards of industrial and personal hygiene are maintained. Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

For further guidance on Product Health & Safety refer to the appropriate Shell Product Safety Data Sheet

- **Protect the environment**

Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Advice**

- Advice on applications not covered in this leaflet may be obtained from your Shell Representative.