Shell **Alexia** *40 XC*

Technical Data Sheet

- Excellent Cleanliness
- Reliable protection

A low-BN, high-performance cylinder lubricant designed for modern low-speed, two-stroke marine engines using low (< 0.5%) sulphur fuels.

Engine Cleanliness: Keeping engines clean minimises maintenance costs and enables periods between overhauls to be extended.
Engine Reliability: Excellent acid-neutralising properties help to prolong the life of components; Minimises deposits on pistons, piston rings, ring grooves, under piston spaces and in cylinder ports; Controls cylinder liner and piston ring wear.
Efficient on-board operations: No need to switch between high- and low-BN lubricants; fully miscible and compatible with all other cylinder lubricants in the Shell portfolio.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- **Designed to keep engines clean, minimizing maintenance cost and enabling periods between overhauls to be extended**

  Proven to deliver >30% cleanliness than Category 1 BN40 cylinder oils and equal cleanliness to Category II BN100 cylinder oils.
  Significantly lowers ash accumulation in the exhaust gas system.

- **Helps to maintain engine reliability**

  Minimises deposits on pistons, piston rings, ring grooves, under piston spaces and in cylinder ports.
  Excellent acid neutralizing properties help to prolong the life of components.
  Controls cylinder liner and piston ring wear.

- **Supports efficient onboard operations**

  No need to switch between high- and low-BN lubricants.
  Fully miscible and compatible with all other cylinder lubricants in the Shell portfolio.
  Completely stable in storage under a variety of conditions encountered on ships.

- **Designed for latest engines**

  Made from a proprietary formulation that has undergone >6000 hours of rigorous testing on latest engine types with IMO 2020 compliant fuels.
  Approved for use in all MAN ES B&W two-stroke engines Mark 9 and above.
  Suitable for all MAN ES B&W two-stroke engines including Mark 8 and lower engines.

*Based on results of field trials conducted in collaboration with MAN Energy Solutions in which Shell Alexia 40 XC oil was tested against Category I BN40 and Category II BN100 cylinder oils.

Main Applications

- Recommended for all MAN ES B&W two-stroke engines Mark 9 and above and using low (< 0.5%) sulphur fuels, including VLSFO, ULSFO, Distillate Fuels, LNG or Biofuels (provided the recommendations in the engine type specific guidelines are followed).
- **Engine manufacturer acceptance**

  Approved for use in all MAN ES B&W two-stroke engines Mark 9 and above; Suitable for all MAN ES B&W two-stroke engines including Mark 8 and lower engines (provided the recommendations in the engine type specific guidelines are followed).

- For detailed application advice based on your specific engine type and operating conditions, please refer to manufacturer's guidelines.

Specifications, Approvals & Recommendations

Cylinder oil feed rates

- Insufficient cylinder oil feed rate can lead to seized and broken rings; and consequent blow-by and scavenge fire risks, and to the formation of excessive deposits.

To obtain optimum performance with Shell Alexia 40XC

- Observe the optimum cylinder oil feed rate according to engine condition within the engine manufacturer's recommendation.
- Follow the manufacturer's feed rate recommendations when running in new liners and / or rings.
- Ensure the lubricator drive system is well maintained and properly adjusted.
- Clean and overhaul lubricator boxes according to manufacturer's recommendations.
- Regularly monitor lubricant performance through use of tools such as Shell LubeAnalyst and Shell LubeMonitor.

For a full listing of equipment approvals and recommendations, please consult your Shell Marine Products representative, or local Shell Technical Helpdesk.

Compatibility & Miscibility

- **Mixing of cylinder lubricants**

Shell Alexia 40 XC is fully miscible and compatible with all other cylinder lubricants in the Shell portfolio.

For optimum performance, Shell Alexia 40 XC should not be used in conjunction with other cylinder lubricants.

Typical Physical Characteristics

Properties			Method	Shell Alexia 40 XC
SAE Viscosity Grade				50
Viscosity Index			DIN ISO 2909	98
Kinematic Viscosity	@100°C	mm^2/s	ASTM D445	18.5
Density	@15°C	kg/m^3	DIN EN ISO 12185	915
Flash Point		°C minimum	ASTM D93	210
Pour Point		°C maximum	ISO 3016	-20
BN		mg/KOH/g	ISO 3771	40
Sulphated Ash		% wt	Calculated Sulphated Ash	5.2

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 and Safety**

Shell Alexia 40 XC is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

Guidance on Health and Safety is available on the appropriate Safety Data Sheet, which can be obtained from https://www.epc.shell.com

- **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 here may be obtained from your Shell representative.