# Shell **Morlina** *S2 BA 150*

Technical Data Sheet

- Long Oil Life
- Excellent Corrosion Protection
- Outstanding System Efficiency
- Excellent Wear Protection

***Special Application Bearing & Circulating Oils***

Shell Morlina S2 BA oils are high performance oils designed to provide excellent lubrication and protection for challenging industrial bearing and circulating applications such as those found in the steel mill environment, especially No-Twist® Rod Mill Systems. Morlina S2 BA meets the requirements of OEMs such as Morgan and Danieli.

## DESIGNED TO MEET CHALLENGES

### Performance, Features & Benefits

- **Excellent Wear, Rust & Corrosion Protection**

  Shell Morlina S2 BA oils help prolong the life of bearings and circulating systems through:

  - Enhanced water separation ensuring critical oil films are retained even in systems with high levels of water contamination.

  - Robust protection against corrosion even in the presence of water.

  - Reduction of bearing wear during mill operation.

- **Long Oil Life – Maintenance Saving**

  Shell Morlina S2 BA oils are formulated with an ashless rust and oxidation inhibitor package that helps provide consistent performance and protection throughout the maintenance interval and mitigates the formation of acidic oxidative by-products and deposits.

- **Outstanding System Efficiency**

  Shell Morlina S2 BA oils are blended with high quality, solvent refined base oils that promote water separation and air release to ensure the efficient lubrication of the machines and systems. Strong demulsibility properties ensure that Morlina S2 BA will withstand harsh mill process water contamination. The air release properties help to minimize cavitation and associated damage to circulating pumps.

  Shell Morlina S2 BA oils are also suitable for use with high beta ratio filtration applied in rod mill systems to help ensure effective contaminant free lubrication to critical machine parts.

### Main Applications



- **Morgan (Primetals) Rod Mill Systems & Finishing Mill Stands**

  Shell Morlina S2 BA oils meet the demanding requirements for the lubrication of Morgan (Primetals) No-Twist® Mill Systems where a single lubricant is required to protect highly loaded roller and plain bearings operating at high speeds and subjected to contamination from cooling water and iron oxides of the mill. The ISO 150 viscosity grade may also have specific application in the Finishing Mill Stands of non-ferrous mills. (Note – Morgan is now part of Primetals Technologies)

- **General Industrial Bearing and Circulating Systems**

  Shell Morlina S2 BA oils are also suitable for use in many general industrial lubrication systems were an anti-wear lubricant with mild EP properties are required.

- Shell Morlina S2 BA oils are widely used in the can manufacturing sector for lubrication of the bodymaker, providing enhanced water separability and wear protection.

- **Enclosed Industrial Gear Systems**

  Low or moderately loaded enclosed gears where mild EP performance (regular load) is sufficient.

## Specifications, Approvals & Recommendations

**Shell Morlina S2 BA meets the requirements of :**

- Morgan Non-Ferrous Mills (Spec MMC40009)
- ISO 12925-1 – types CKB and CKC
- DIN 51517-1, 2, 3 – types C, CL, and CLP

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

## Compatibility & Miscibility

- **Paint Compatibility**

  Shell Morlina S2 BA oils are compatible with seal materials and paints normally specified for use with mineral oils.

## Typical Physical Characteristics

| Properties | | | Method | Shell Morlina S2 BA 150 |
|---|---|---|---|---|
| ISO Viscosity Grade | | | ISO 3448 | 150 |
| Kinematic Viscosity | @40°C | $mm^2/s$ | ASTM D445 | 150 |
| Kinematic Viscosity | @100°C | $mm^2/s$ | ASTM D445 | 14.7 |
| Density | @15°C | $kg/m^3$ | ISO 12185 | 0.887 |
| Viscosity Index | | | ISO 2909 | >95 |
| Flash Point (COC) | | °C | ASTM D92 | 250 |
| Pour Point | | °C | ISO 3016 | -12 |
| Rust, Salt Water | | | ASTM D665B | Pass |
| Water Separability (time to no more than 3 ml emulsion) @ 82°C | | minutes | ASTM D1401 | 10 |
| FZG Failure Load Stage | | | ASTM D1582 | 12 Pass |
| Oxidation Control Test: RPVOT | | minutes | ASTM D2272 | 550 |
| Oxidation Control Test: TOST | | hours | ASTM D943 | 2 000 |
| 4-ball Load Wear Index | | kgf | ASTM D2783 | 42 |
| 4-ball Load Weld Load | | kgf | ASTM D2783 | 200 |

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**

  This product 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 http://www.epc.shell.com

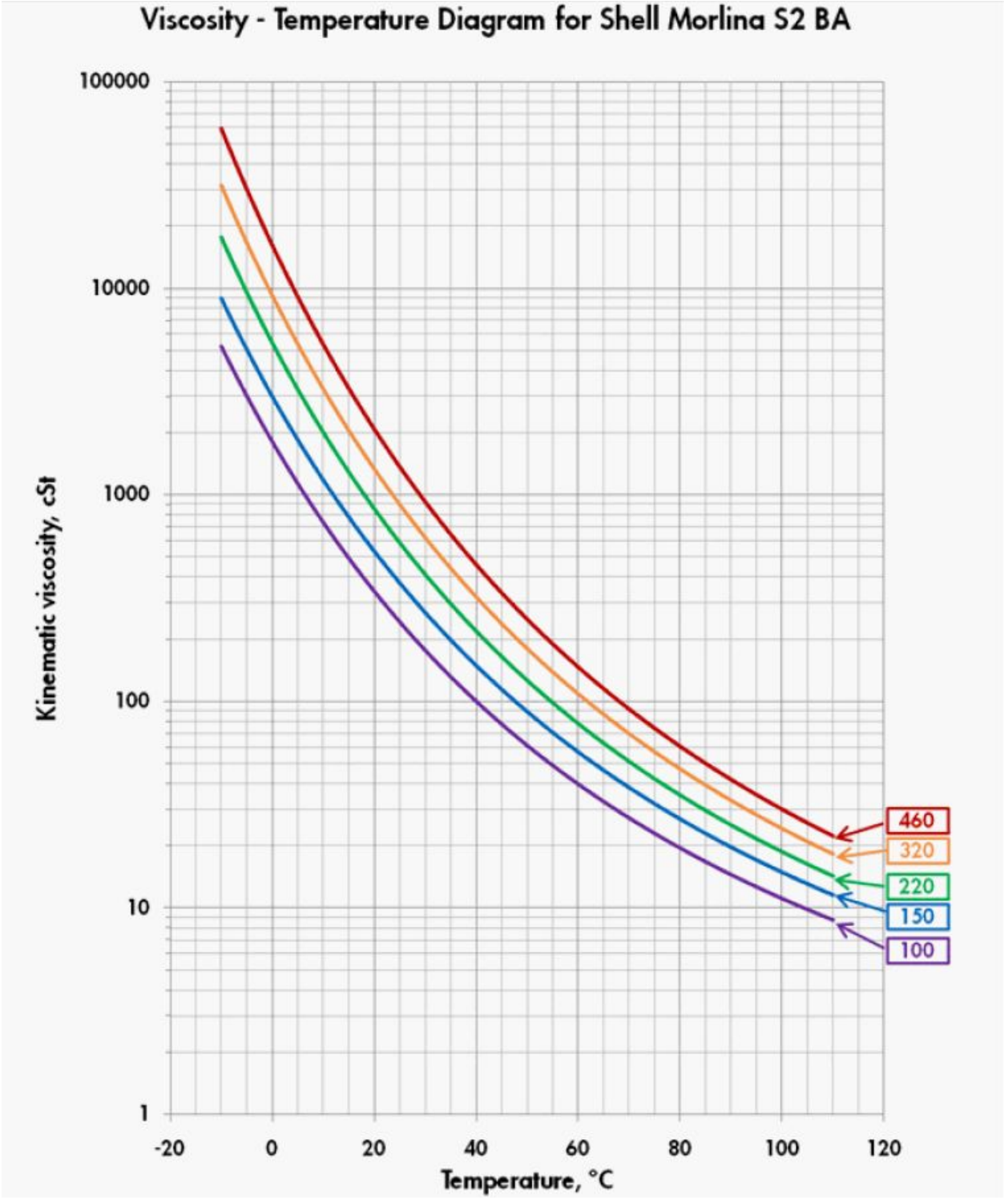
- **Protect the Environment**

  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.


Viscosity - Temperature Diagram for Shell Morlina S2 BA
Kinematic viscosity, cSt
100000
10000
1000
100
10
1
-20
0
20
40
60
80
100
120
Temperature, °C
460
320
220
150
100