



Technical Data Sheet

- Reliable Protection
- Water Shedding
- Long Life

Shell Paper Machine Oil S2 M 320

Paper Machine Circulating Oil

Shell Paper Machine Oils S2 M are high performance oils designed to provide excellent all-round protection for the diverse needs and conditions found in modern paper machines. These products offer better wear and corrosion protection to keep paper machines running without interruption.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- **Long oil life – Maintenance Saving**

Shell Paper Machine Oil S2 M oil has been designed to resist breakdown under high temperatures and in the presence of water. Excellent performance in oxidation tests (such as TOST and RPVOT) test demonstrate the products can provide long oil life capability and help protect against the formation of harmful deposits.

- **Reliable wear & corrosion protection**

Shell Paper Machine Oil S2 M uses a well proven zinc-based anti-wear system to provide reliable protection against wear.

In addition, the formulation also enhances protection against corrosion even in the wet and high temperature environments.

- **Maintaining system efficiency**

Excellent water separation and air release helps in conjunction with high quality base oils helps ensure the efficient lubrication of the machines and systems.

Shell Paper Machine Oil S2 M is also suitable for use with fine filtration to help ensure effective contaminant free lubrication to critical machine parts.

- **Paper machine applications**

Shell Paper Machine Oil S2 M has been used extensively within the paper and pulp industry and is proven to deliver effective lubrication and protection in both the wet areas of machine application and the high temperature dry areas.

Bulk oil temperatures should not exceed 70°C. It is specifically designed for:

1. Lubrication of bearings in the drying section of paper machines
2. Hydraulic and lubrication systems in deflection-compensating rolls
3. Enclosed gears not requiring full EP performance.

Specifications, Approvals & Recommendations

- DIN 51517-2 – type 2
- FZG load stage 12 (DIN 51354)
- Voith VN 108
- SKF (paper machine oils)
- Metso (paper machine oils)

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

Main Applications



Compatibility & Miscibility

- **Seal & Paint Compatibility**

Shell Paper Machine Oil S2 M is compatible with seal materials and paints normally specified for use with mineral oils.

Typical Physical Characteristics

Properties		Method	Shell Paper Machine Oil S2 M 320
Viscosity Grade		ISO 3448	320
Kinematic Viscosity	@40°C mm ² /s	ASTM D445	320
Kinematic Viscosity	@100°C mm ² /s	ASTM D445	25
Viscosity Index		ISO 2909	95
Density	@15°C kg/m ³	ISO 12185	900
Flash Point	°C	EN ISO 2592	265
Pour Point	°C	ISO 3016	-9
Water Separation	minutes	ASTM D1401	20
Air Release	minutes	ASTM D3427	11.2
Foaming Characteristics - Seq I Tendency Stability	@24°C	ASTM D892	0/0
Foaming Characteristics - Seq II Tendency Stability	@93.5°C	ASTM D892	0/0
Foaming Characteristics - Seq III Tendency Stability	@24°C	ASTM D892	0/0
FZG Failure Load Stage		DIN 51354	12
Rust Preventing - Synthetic Sea Water	degree	ASTM D665B	PASS

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

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 <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.