Technical Data Sheet

- *Long life and improved efficiency*
- *Industrial applications*

Shell **Tellus** ***S3 M 46***

Premium Zinc-Free Industrial Hydraulic Fluid

Shell Tellus S3 M hydraulic fluids are high performance lubricants that use exclusive zinc-free technology to provide outstanding protection and performance in most manufacturing and many mobile equipment operations. They resist breakdown under heat or mechanical stress, helping to prevent damaging deposits that can decrease the efficiency of your hydraulic system.

Performance, Features & Benefits

- **Long fluid life - maintenance saving**

  Shell Tellus S3 M fluids offer an improved capability to extend fluid maintenance intervals and hence reduce equipment downtime through:

  - An extended ASTM D 943 TOST lifetime, with an oxidative stability that is up to three times longer than the industry minimum.

  - Excellent resistance to breakdown in the presence of water and heat.

  These features provide extended maintenance capability without compromising protection or performance, even under severe or extended temperature range applications.

- **Outstanding wear protection**

  Advanced ashless (zinc-free) anti-wear additives provide protection over a wide range of conditions, including low and severe duty, and high load operation. This protection has been demonstrated in tough industry standard hydraulic pump tests such as the Denison T6H and Eaton Vickers 35VQ25 tests.

- **Maintaining system efficiency**

  Superior cleanliness and filterability; coupled with excellent water separation, air release and anti-foam characteristics, all help to maintain or enhance hydraulic system efficiency. The filterability of Shell Tellus S3 M is maintained even when the fluid is contaminated with water.

  Shell Tellus S3 M fluids have a ISO 4406 cleanliness of 21/19/16 or better ex Shell filling lines. As recognized by DIN 51524 specification, the oil is exposed to various influences with transport and storage that could effect the cleanliness level.

Main Applications

- **Manufacturing and industrial hydraulic systems**

  Shell Tellus S3 M fluids are suitable for a wide range of hydraulic power applications found in manufacturing and industrial environments.

- **Severe duty hydraulic service**

  The long-life characteristics of Shell Tellus S3 M fluids can make them particularly suitable for severe duty (e.g. load, temperature) applications or where extended life is required (e.g. Remote or inaccessible locations).

- **Marine and mobile hydraulic systems**

  Shell Tellus S3 M fluids are suitable for marine and mobile applications where ISO HM type hydraulic fluids are recommended.

- **Environmental impact**

  Shell Tellus S3 M has a reduced environmental impact in the event of a leak or accidental spillage compared to conventional zinc-based hydraulic fluids. This is achieved through the use of ashless anti-wear technology and low sulphur base oils.

  For further reductions in environmental impact, we offer the Shell Naturelle range of environmentally considerate lubricants.

  For applications that experience wide temperature variations we recommend the Shell Tellus “V” series of hydraulic fluids.

Specifications, Approvals & Recommendations

- Denison Hydraulics (HF-0, HF-1 and HF-2)
- Eaton Vickers (Brochure 694)
- MAG (Cincinnati Machine) P-68 (ISO 32), P-70 (ISO 46), P-69 (ISO 68)
- ISO 11158 (HM fluids)
- DIN 51524-2 (HLP oils)
- ASTM 6158 (HM mineral oils)
- SS 15 54 34 M

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Compatibility & Miscibility

- **Compatibility**

  Shell Tellus S3 M fluids are suitable for use with most hydraulic pumps.

- **Fluid Compatibility**

  Shell Tellus S3 M fluids are compatible with most other mineral oil based hydraulic fluids. However, mineral oil hydraulic fluids should not be mixed with other fluid types (e.g. environmentally acceptable or fire-resistant fluids).

- **Seal & Paint Compatibility**

  Shell Tellus S3 M fluids are compatible with seal materials and paints normally specified for use with mineral oils.

Typical Physical Characteristics

Properties			Method	Shell Tellus S3 M
ISO Viscosity Grade			ISO 3448	46
ISO Fluid Type			ISO 6743-4	HM
Kinematic Viscosity	@0°C	cSt	ASTM D 445	565
Kinematic Viscosity	@40°C	cSt	ASTM D 445	46
Kinematic Viscosity	@100°C	cSt	ASTM D 445	6.8
Viscosity Index			ISO 2909	105
Density	@15°C	kg/m³	ISO 12185	865
Flash Point		°C	IP 34 (PMCC)	220
Pour Point		°C	ISO 3016	-33

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

- Guidance on Health and Safety is available on the appropriate Material 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 Tellus S3 M