Technical Data Sheet

Formerly Known As: **Shell Tellus EE**

Shell **Tellus** ***S4 ME 46***

- Extra Long Life & Protection
- Energy Saving

Advanced Synthetic Industrial Hydraulic Fluid

Shell Tellus S4 ME hydraulic fluids are designed to help users improve the energy efficiency of their hydraulic systems without compromising the protection of the system or maintenance procedures of their equipment and operations. Shell Tellus S4 ME has been demonstrated to improve energy efficiency in a wide range of applications such as plastic injection moulding, metal pressing, and mining conveyors. In addition, Shell Tellus S4 ME is also designed to help equipment service life and lower maintenance costs through providing outstanding wear protection and long oil life capability.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- **Energy efficiency**

  With the help of sophisticated system modelling, Shell Tellus S4 ME has been designed to improve the energy efficiency of hydraulic systems through a specially developed formulation that balances the flow, frictional and power transmission characteristics of the fluid. Carefully monitored field evaluations have shown typical savings of 1-4% in such applications.

  (1) Average of Shell and end-user evaluations. Actual energy savings may vary depending on application, current oil used, maintenance procedures, condition of equipment, operating conditions and intensity of hydraulic power usage

- **Reduce maintenance costs**

  Shell Tellus S4 ME offers outstanding performance in all the properties relevant to a hydraulic fluid such as hydraulic pump wear and resistance to breakdown in contact with water or other contaminants.

  Together with an oil life that exceeds the 10,000 hours maximum duration that can be measured in the industry Turbine Oil Stability Test (TOST), Shell Tellus S4 ME offers you the capability to significantly extend oil change intervals, which can help reduce overall maintenance costs.

- **Greater equipment protection**

  In addition to meeting standard industry and OEM specification requirement, Shell Tellus S4 ME provides an exceptional level of additional protection.

  For instance, Shell Tellus S4 ME results in up to 68% less wear in the Vickers V104C pump wear test than the 50 mg pass/fail limits for many OEMs such as Cincinnati Machine (P-specification), Bosch-Rexroth (RD 90220-1) and Eaton (Vickers).

  Superior cleanliness (meeting the requirements of ISO 4406 21/19/16 class or better ex Shell filling plants. As recognized by DIN 51524 specification, the oil is exposed to various influences with transport and storage that could effect the cleanliness level). Together with outstanding protection against sludge build up, valve sticking and corrosion, it can help prolong the life of your hydraulic equipment.

Main Applications



- **Industrial hydraulic systems**

  Particularly suitable for those systems with high intensity of hydraulic power usage such as injection moulding and high pressure metal pressing operations and where resistance to high temperatures or long oil life is required.

- **Mobile hydraulic systems**

  Shell Tellus S4 ME is also suitable for use in certain mobile hydraulic fluid power transmission systems and in marine applications and provides superior low temperature fluidity compared to most conventional ISO HM type fluids.

Specifications, Approvals & Recommendations

- Denison Hydraulics (HF-0, HF-1, HF-2)
- Fives Cincinnati P-70 (ISO 46)
- Eaton Vickers (Brochure 694)
- Arburg (Injection moulding applications)
- ASTM D6158 (HM fluids)
- ISO 11158 (HM fluids)
- DIN 51524 Part 2 HLP type
- Swedish Standard SS 15 54 34 AM
- Krauss Maffei

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

Compatibility & Miscibility

- **Compatibility**

  Shell Tellus S4 ME fluids are suitable for use with most hydraulic pumps.
- **Fluid Compatibility**

  Shell Tellus S4 ME 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 S4 ME fluids are compatible with seal materials and paints normally specified for use with mineral oils.

Typical Physical Characteristics

Properties			Method	Shell Tellus S4 ME 46
ISO Viscosity Grade			ISO 3448	46
ISO Fluid Type			ISO 6743-4	HM
Kinematic Viscosity	@0°C	cSt	ASTM D445	450
Kinematic Viscosity	@40°C	cSt	ASTM D445	46
Kinematic Viscosity	@100°C	cSt	ASTM D445	7.7
Viscosity Index			ISO 2909	135
Density	@15°C	kg/m^3	ISO 12185	832
Flash Point		°C	ISO 2592 (COC)	250
Pour Point		°C	ISO 3016	-51

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 Tellus ME hydraulic fluid 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.

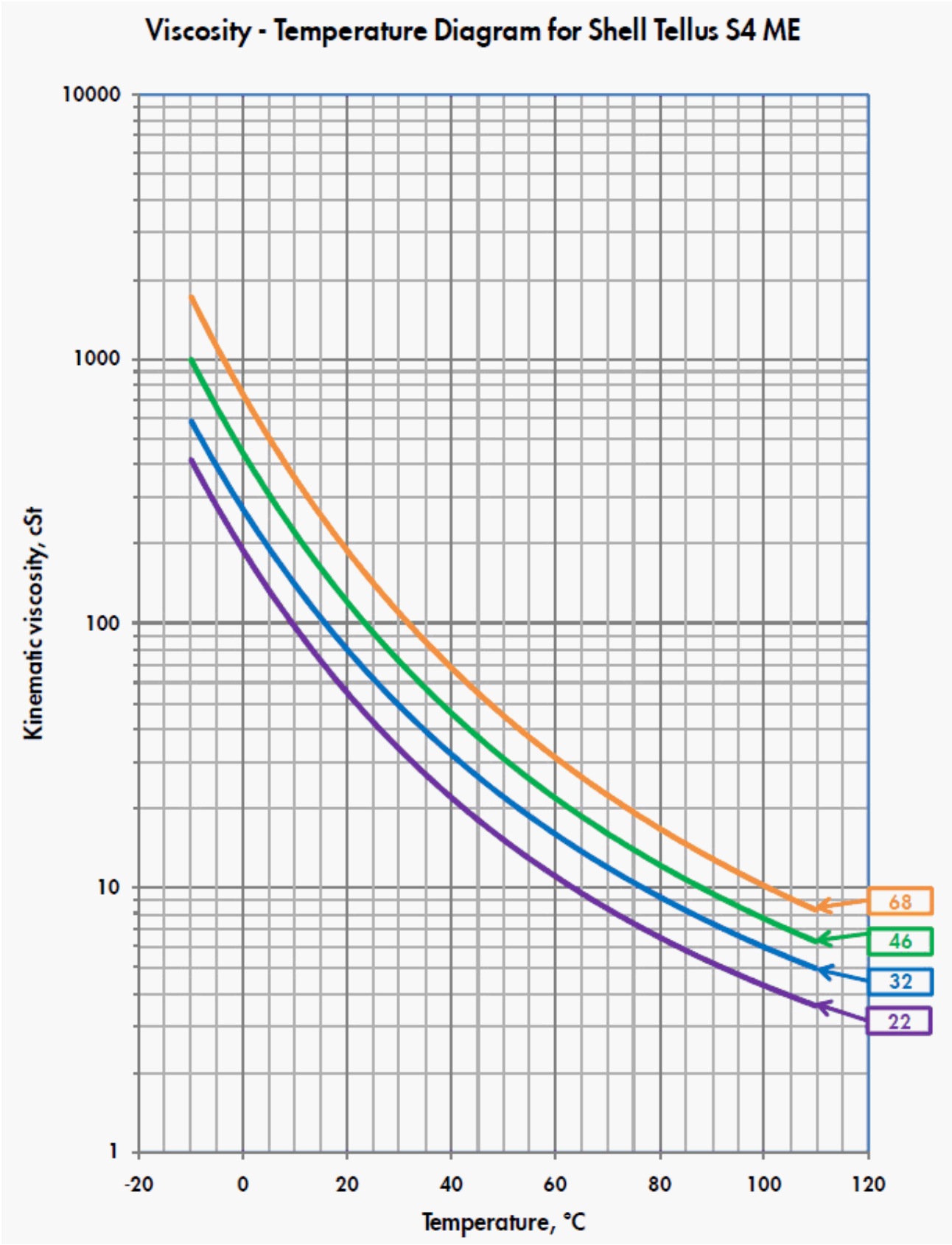
  Guidance on Health and Safety is available on the appropriate Safety Data Sheet, which can be obtained from https://www.epc.shell.com
- **Protect the Environment**

  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.


Viscosity - Temperature Diagram for Shell Tellus S4 ME
10000
1000
100
10
1
Kinematic viscosity, cSt
-20
0
20
40
60
80
100
120
Temperature, °C
68
46
32
22