Technical Data Sheet

Formerly Known As: **PANOLIN HLP Synth ECO**

Shell **PANOLIN** *S3 HLP Synth 46*

- Longer Life
- Readily Biodegradable

Hydraulic fluid - high performance, readily biodegradable, saturated synthetic esters

Shell PANOLIN S3 HLP SYNTH is a zinc-free additive technology, blended with high-performance fully synthetic saturated esters provides an good blend of lubrication performance. Readily biodegradable with a low ecotoxicity, particularly suited for use in environmentally sensitive areas. For use in stationary and mobile hydraulic systems including construction and forestry.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- **Longer oil life**

  Shell PANOLIN S3 HLP Synth has a longer oil life and is designed to help equipment operate without interruptions. Longer oil-drain intervals mean less oil being produced, purchased and disposed of. High VI provides performance across a wide temperature operating window.

- **Good wear protection**

  Shell PANOLIN S3 HLP Synth is designed to help equipment operate without interruptions. Shell PANOLIN S3 HLP Synth offers good wear protection of hydraulic equipment.

- **Designed to protect even in cold climates**

  In addition to protecting the machine over a wide temperature operating range, shear-stable, high viscosity index fluids enable increased hydraulic efficiency in comparison to typical HM mineral oil.

- **Lower Environmental Impact**

  Recommended for use in environmentally sensitive areas - offers reduced impact of leak or accidental spillage into the environment compared to conventional mineral oils. Readily biodegradable - biodegraded by over 60% after 28 days in the OECD 301 B carbon dioxide evolution test. Low Ecotoxicity - Classified as ‘not harmful’ to bacteria, algae, freshwater and marine invertebrates, and fish when tested as water-accommodated fractions (WAFs) according to OECD and EPA test guidelines.

Main Applications

- For stationary and mobile hydraulic systems including earthmoving, forestry, construction and hydroelectric applications. Compressors, bearing lubrication and oil circulation systems & marine hydraulic systems.

Specifications, Approvals & Recommendations

- Biodegradable OECD 301B >60%

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

Compatibility & Miscibility

- It is strongly recommended that an oil sample is taken from the system following changeover and analysed via the Shell Rapid Lubricants Analysis service to confirm the new fluid charge is fit for use.

- **Fluid Compatibility**

  Shell PANOLIN Fluids are miscible with mineral oils. However, in order to ensure that the environmental properties and performance of Shell PANOLIN Fluids are maintained, the system should be drained and flushed thoroughly when changing fluids.

Typical Physical Characteristics

Properties			Method	Shell PANOLIN S3 HLP Synth 46
Kinematic Viscosity	@40°C	mm^2/s	ASTM D445	43.7
Pour Point		°C	ASTM D97	-54
Flash Point		°C	ASTM D92	247
Density	@15°C	kg/m^3	ASTM D4052	910

These characteristics are typical of production, 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.

- **Additional Technical Advice**

  The information and guidance offered for use of Shell PANOLIN products is based on experience and understanding gained through the development and manufacturing of lubricants. The performance of the products can be influenced by a number of variables, not limited to, contamination, operating temperature, equipment application, external environment and material type. It is recommended that you discuss application and fluid recommendations with both your OEM and local Shell technical representative before the product is used. Advice given is non binding and Shell will not be held liable for any consequence as a result of or through misuse of the fluid.