



- EU Ecolabel
- US EPA VGP Compliant
- Versatile Applications



# Shell Naturelle S4 Hydraulic Fluid 46

**Environmentally Acceptable, Fully Saturated Synthetic Hydraulic Fluid**

Shell Naturelle S4 Hydraulic Fluid is an advanced hydraulic fluid for use in hydraulic and power transmission systems. Readily biodegradable with low ecotoxicity, Shell Naturelle S4 Hydraulic Fluid is particularly suited for use in environmentally sensitive areas. Fully saturated synthetic esters, blended with ashless additives, provide Shell Naturelle S4 Hydraulic Fluid with a superior blend of lubrication performance and environmental acceptability.

## DESIGNED TO MEET CHALLENGES

### Performance, Features & Benefits

- **Excellent wear protection**

Advanced ashless (zinc and metal free) anti-wear additives provide protection over a wide range of conditions – proven protection in tough industry standard tests such as the Eaton Vickers 35VQ25 vane pump and Parker Denison T6H20C hybrid vane & piston pump.

- **Extended Oil Life**

Fully saturated synthetic ester means reduced fluid degradation in service, leading to an extended oil drain interval.

- **Maintaining system efficiency**

Superior cleanliness and filterability, coupled with excellent water separation, air release and antifoam characteristics, all help contribute to maintaining or enhancing the efficiency of hydraulic systems.

- **Readily biodegradable**

Shell Naturelle S4 Hydraulic Fluid is biodegradable by over 60% after 28 days in the OECD 301 B carbon dioxide evolution test.

- **Low toxicity towards the environment**

Shell Naturelle S4 Hydraulic Fluid is classified as 'not harmful' to bacteria, algae, freshwater invertebrates, and fish when tested as water-accommodated fractions (WAFs) according to OECD test guidelines.

- **Very high renewables content**

Shell Naturelle S4 Hydraulic Fluid has a mean biobased content of 70% (ASTM D 6866).

### Main Applications



- **Mobile / exterior hydraulic applications**

Hydraulic and fluid power transmission systems in exposed environments can be subject to variations in temperature. The low pour point and naturally high shear stable viscosity index (VI) of Shell Naturelle S4 Hydraulic Fluid helps deliver responsive performance from cold start to full load, heavy duty operation.

- **General industrial control equipment and hydraulic systems**

The excellent anti-wear properties and high viscosity index (VI) of Shell Naturelle S4 Hydraulic Fluid, mean that it can often be used where ISO 11158 (HM/HV) and DIN 51524 Part 2 or Part 3 (HLP/HVLP) mineral oil hydraulic fluids are specified.

- **Environmentally sensitive areas**

Shell Naturelle S4 Hydraulic Fluid is an 'environmentally acceptable' hydraulic fluid (ISO 15380 HEES), with 'reduced harm for water and soil during use' (EU Ecolabel). When compared to conventional mineral oil hydraulic fluids, it will have a reduced environmental impact in the event of a leak or accidental spillage. It is particularly suited for use in environmentally sensitive areas.

## Specifications, Approvals & Recommendations

- Meets requirements of EU Ecolabel for lubricants
- License number NL/027/019
- ISO 15380 HEES
- Shell Naturelle S4 Hydraulic Fluid is a USDA Certified Biobased Product
- Approved as per United States Environmental Protection Agency's (EPA) 2013 Vessel General Permit (VGP)
- Swedish Standard SS 15 54 34 SP

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

## Compatibility & Miscibility

### • Fluid Compatibility

Shell Naturelle S4 Hydraulic Fluid is compatible with most other ester based biodegradable hydraulic fluids. However, ester based hydraulic fluid should not be mixed with other fluid types (e.g., vegetable oil based hydraulic fluid). In order to ensure that the environmental properties and performance of Shell Naturelle S4 Hydraulic Fluid are maintained, the hydraulic system should be drained and flushed thoroughly when changing fluids. Guidelines on fluid change-over can be found in ISO 15380 Annex A.

### • Seal & Paint Compatibility

Shell Naturelle S4 Hydraulic Fluid 46 is compatible with fluoroelastomers (FPM/FKM) such as Viton. Depending on the elastomer grade, it is also compatible with polyester urethane (AU) elastomers.

### • This product is not suitable for HNBR/ NBR seals

Other seal materials and system components such as paints may be adversely affected and advice should be sought from the respective manufacturers.

## Typical Physical Characteristics

Properties			Method	Shell Naturelle S4 Hydraulic Fluid 46
ISO Viscosity grade			ISO 3448	46
ISO Fluid Type			ISO 6743-4	HEES
Kinematic Viscosity	@-20°C	cSt	ASTM D445	2 313
Kinematic Viscosity	@40°C	cSt	ASTM D445	46
Kinematic Viscosity	@100°C	cSt	ASTM D445	8.0
Viscosity Index			ISO 2909	145
Density	@15°C	kg/m <sup>3</sup>	ISO 12185	972
Flash Point (COC)		°C	EN ISO 2592	260
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 Naturelle S4 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.