



Product Data Sheet

Hyspin HVI

High Viscosity Index anti-wear Hydraulic oils

Description

The Castrol Hyspin™ HVI range of high viscosity index (VI) oils is based on a carefully selected ashless (zinc free) additive system designed to meet and exceed the most exacting performance standards.

Application

Hyspin HVI oils are intended for severely stressed hydraulic systems requiring a high level of anti-wear performance and fine filtration. In addition, Hyspin HVI exhibits excellent corrosion protection as well as outstanding thermal and oxidative stability. Hyspin HVI has excellent hydrolytic stability and separates rapidly from water contamination. Hyspin HVI contains a shear stable additive system which helps to maintain the viscosity characteristics of the product over a wide temperature range, even during prolonged use, and imparts a very low pour point which enables the product to be used in cold environments. The Hyspin HVI range is fully compatible with elastomer materials commonly used for static and dynamic seals, such as nitrile, silicone and fluorinated (e.g. Viton) polymers.

Applications include:

- Outdoor equipment which are likely to operate over wide temperature ranges, such as machinery subjected to cold start up conditions and high temperature continuous running. Examples include off-highway and marine applications.
- Indoor manufacturing equipment that incorporates control systems requiring minimal viscosity change with temperature. Examples include precision machine tools.

Hyspin HVI is classified as follows:

- DIN 51502 classification – HVL P
- ISO 6743/4 - Hydraulic Oils Type HV

Hyspin HVI (for appropriate viscosity grade) is approved by:

- Parker Hannifin (Denison) HF0, HF1 & HF2
- Eaton E-FDGN-TB002-E

Hyspin HVI grades meet the requirements (for appropriate viscosity grade) of:

- DIN 51524 Part 3
- Cincinnati Lamb (Milacron) P 68-69-70
- US Steel 126 & 127

Advantages

- High viscosity index and low pour point enables the product to be used over a wide temperature range. Good shear stability means no excessive loss in viscosity due to mechanical shearing.
- Excellent anti-wear performance provides extended wear protection for hydraulic pumps. Reduced down time due to unscheduled maintenance and savings from replacement part costs.
- Excellent water separation and hydrolytic stability means reduced down time through prolonged lubricant life and increased equipment reliability.
- Excellent thermal and oxidative stability provides reliable performance and extended oil life in severe applications. Minimal deposit formation gives a cleaner system and reduced frequency of filter changes.
- Excellent filterability characteristics (including in the presence of water) enables cost savings to be made due to increased filter life.

Typical Characteristics

| Name | Method | Units | HVI 15 | HVI 22 | HVI 32 | HVI 46 | HVI 68 | HVI 100 |
|---|------------------------|--------------------|-------------|-------------|-------------|-------------|---------|---------|
| ISO Viscosity Grade | - | - | 15 | 22 | 32 | 46 | 68 | 100 |
| Density @ 15°C / 59°F | ISO 12185 / ASTM D4052 | kg/m ³ | 840 | 850 | 852 | 859 | 866 | 870 |
| Kinematic Viscosity @ 40°C / 104°F | ISO 3104 / ASTM D445 | mm ² /s | 15 | 22 | 32 | 46 | 68 | 100 |
| Kinematic Viscosity @ 100°C / 212°F | ISO 3104 / ASTM D445 | mm ² /s | 3.7 | 4.7 | 6.1 | 7.9 | 10.8 | 14.6 |
| Viscosity Index | ISO 2909 / ASTM 2270 | - | >140 | >140 | >140 | >140 | >140 | >140 |
| Pour Point | ISO 3016 / ASTM D97 | °C/°F | -45/-49 | -51/-60 | -51/-60 | -45/-49 | -45/-49 | -42/- |
| Flash Point - closed cup method | ISO 2719 / ASTM D93 | °C/°F | 190/ 374 | 200/ 392 | 220/ 428 | 223/ 433 | 238/460 | 240/4 |
| Foam Sequence I - tendency / stability | ISO 6247/ ASTM D892 | ml/ml | 20/0 | 20/0 | 20/0 | 20/0 | 20/0 | 20/0 |
| Water Separation @ 54°C / 129°F (40/37/3) | ISO 6614/ ASTM D1401 | min | 5 | 10 | 10 | 10 | 10 | - |
| Water Separation @ 82°C / 180°F (40/37/3) | ISO 6614/ ASTM D1401 | min | - | - | - | - | - | 10 |
| Air Release @ 50°C / 122°F | ISO 9120/ ASTM D3427 | min | 1 | 1 | 2 | 3 | 6 | 12 |
| FZG Gear Scuffing test - A/8.3/90 | ISO 14635-1 | Failure Load Stage | - | - | 12 | 12 | 12 | 12 |
| Rust test - distilled water (24 hrs) | ISO 7210 / ASTM D665A | Rating | Pass | Pass | Pass | Pass | Pass | Pass |
| Rust test - synthetic seawater (24 hrs) | ISO 7210 / ASTM D665B | Rating | Pass | Pass | Pass | Pass | Pass | Pass |
| KRL Tapered Roller Bearing Shear Stability Test (20h, 60°C, 5KN, 1450rpm) | CEC L-45-A-99 | viscosity loss (%) | 2.3 | 4.0 | 5.3 | 7.3 | 9 | 11 |
| Oxidation Stability - TOST | ISO 4263-1 / ASTM D943 | hours | - | - | >5000 | >5000 | >5000 | - |

Subject to usual manufacturing tolerances.

Hyspin HVI
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