



## Castrol Hyspin AWS Range

Anti-wear hydraulic oil

### Description

Castrol Hyspin™ AWS hydraulic oil range is based upon highly refined mineral oil enhanced with a stabilised zinc additive system.

### Application

Hyspin AWS has been specially formulated to provide good anti-wear and thermal stability performance using proven additive technology. The careful blend of additives with a high quality base stock ensures that Hyspin AWS has excellent hydrolytic and oxidative stability while exhibiting a minimal tendency to produce sludge and deposits. In addition, Hyspin AWS provides corrosion protection to ferrous and yellow metal components found within a hydraulic system. This range is designed for use in industrial hydraulic systems which require anti-wear protection such as lightly loaded gears, variable speed units and bearings. The Hyspin AWS range is compatible with the most commonly used nitrile, silicone and fluropolymer seal materials..

Hyspin AWS is classified as follows:

DIN 51502 classification - HLP

ISO 6743/4 - Hydraulic Oils Type HM

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

Parker Hannifin (Denison) HF0, HF1 & HF2

Eaton E-FDGN-TB002-E

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

DIN 51524 Part 2

Fives Cincinnati P68, P69 & P70

ASTM D6158 HM

ISO 11158 HM

US Steel 126

GB 11118.1 L-HM (General and High Pressure)

### Advantages

Hyspin AWS has the following advantages when compared to conventional hydraulic oils:-

- Good thermal and oxidative stability. Oxidative stability reduces deposit formation, resulting in a cleaner system. This can extend the machinery's operating life.
- Excellent anti-wear performance increases wear protection, which can help reduce downtime caused by unscheduled maintenance.
- Good filterability characteristics, including in the presence of water, enables cost savings to be made from increased filter life and reduced maintenance.
- Excellent water separation and hydrolytic stability, measured by industry standard testing. This increases equipment reliability, helping to prolong the lubricant's life and reduce downtime.

## Typical Characteristics

| Name                                      | Method                 | Units              | AWS 10      | AWS 15      | AWS 22      | AWS 32      | AWS 46      | AWS 68      | AWS 100     | AWS 150     | AWS 220     |
|-------------------------------------------|------------------------|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| ISO Viscosity Grade                       | -                      | -                  | 10          | 15          | 22          | 32          | 46          | 68          | 100         | 150         | 220         |
| Density @ 15°C / 59°F                     | ISO 12185 / ASTM D4052 | kg/m³              | 890         | 870         | 870         | 880         | 880         | 880         | 890         | 890         | 890         |
| Kinematic Viscosity @ 40°C / 104°F        | ISO 3104 / ASTM D445   | mm²/s              | 10          | 15          | 22          | 32          | 46          | 68          | 100         | 150         | 220         |
| Kinematic Viscosity @ 100°C / 212°F       | ISO 3104 / ASTM D445   | mm²/s              | 2.4         | 3.2         | 4.3         | 5.3         | 6.7         | 8.6         | 11.1        | 14.5        | 18.7        |
| Viscosity Index                           | ISO 2909 / ASTM D2270  | -                  | -           | -           | >95         | >95         | >95         | >95         | >95         | >95         | >95         |
| Pour Point                                | ISO 3016 / ASTM D97    | °C/°F              | -36/<br>-33 | -33/<br>-27 | -27/<br>-17 | -27/<br>-17 | -24/<br>-11 | -21/<br>-6  | -18/<br>0   | -15/<br>5   | -12/<br>10  |
| Foam Sequence I - tendency / stability    | ISO 6247 / ASTM D892   | ml/ml              | 10/0        | 10/0        | 10/0        | 10/0        | 10/0        | 10/0        | 10/0        | 10/0        | 10/0        |
| Flash Point - open cup method             | ISO 2592 / ASTM D92    | °C/°F              | 170/<br>338 | 195/<br>383 | 205/<br>401 | 210/<br>410 | 215/<br>419 | 225/<br>437 | 225/<br>437 | 230/<br>446 | 255/<br>491 |
| Flash Point - closed cup method           | ISO 2719 / ASTM D93    | °C/°F              | 145/<br>293 | 160/<br>320 | 170/<br>338 | 200/<br>392 | 200/<br>392 | 220/<br>428 | 220/<br>428 | 220/<br>428 | 230/<br>446 |
| Water Separation @ 54°C / 129°F (40/37/3) | ISO 6614 / ASTM D1401  | min                | 5           | 10          | 10          | 15          | 15          | 15          | -           | -           | -           |
| Water Separation @ 82°C / 180°F (40/37/3) | ISO 6614 / ASTM D1401  | min                | -           | -           | -           | -           | -           | -           | 15          | 20          | 20          |
| Air Release @ 50°C / 122°F                | ISO 9120 / ASTM D3427  | min                | 4           | 4           | 4           | 4           | 8           | 8           | 12          | 18          | 29          |
| FZG Gear Scuffing test - A/8.3/90         | ISO 14635-1            | Failure Load Stage | -           | -           | -           | 11          | 12          | 12          | 12          | 12          | 12          |
| Rust test - distilled water (24 hrs)      | ISO 7120 / ASTM D665A  | -                  | Pass        | Pass        | Pass        | Pass        | Pass        | Pass        | Pass        | Pass        | Pass        |
| Rust test - synthetic seawater (24 hrs)   | ISO 7120 / ASTM D665B  | -                  | Pass        | Pass        | Pass        | Pass        | Pass        | Pass        | Pass        | Pass        | Pass        |

Subject to usual manufacturing tolerances.

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