

## Hyspin™ ZZ Superclean Range

Anti-wear hydraulic oil

### Description

The Castrol Hyspin™ ZZ Superclean hydraulic oil range of lubricants is based on a carefully selected ashless (zinc free) additive system designed to meet and exceed the most exacting performance standards. Filtered to ISO 4406 - 16/14/11 (equivalent to NAS 5), to ensure high cleanliness after storage and delivery.

### Application

The Hyspin ZZ Superclean range is designed for applications requiring anti-wear and superior oxidation performance and is particularly suitable for hydraulic systems using vane and piston pumps where elevated operating temperatures are encountered. They are formulated for use in severely stressed systems in which high levels of anti-wear performance and/or ultra fine filtration are required. They have been proven to be resistant to the effects of 'dieseling' in highly stressed systems such as plastic injection moulding and fatigue testing equipment where the application leads to rapid breakdown of more conventional products.

The range is fully compatible with elastomer materials commonly used for static and dynamic seals, such as nitrile, silicone and fluorinated (e.g. Viton) polymers.

Hyspin ZZ Superclean is classified as follows:

- DIN 51502 classification - HLP
- ISO 6743/4 - Hydraulic Oils Type HM

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

- DIN 51524 Part 2
- Cincinnati Lamb (Milacron) P 68-69-70
- Denison (Parker Hannafin) HF-0
- US Steel 126 & 127
- Eaton (formerly Vickers) I-286-S & M-2950-S
- Bosch Rexroth RE90220

### Advantages

- Good 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 anti-wear performance provides extended wear protection for hydraulic pumps. Reduced down time due to unscheduled maintenance and savings from replacement part costs.
- Excellent filterability characteristic (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 means reduced down time through prolonged lubricant life and increased equipment reliability.

## Typical Characteristics

Name	Method	Units	ZZ 46	ZZ 68
ISO Viscosity Grade	-	-	46	68
Density at 15°C	ISO 12185, ASTM D4052	g/ml	0.88	0.88
K.V. at 40°C	ISO 3104, ASTM D445	mm <sup>2</sup> /s	46	68
K.V. at 100°C	ISO 3104, ASTM D445	mm <sup>2</sup> /s	6.82	8.77
Viscosity Index	ISO 2909, ASTM 2270	-	>95	>95
Pour Point	ISO 3016, ASTM D97	°C	-27	-24
Flash Point, COC	ISO 2592, ASTM D92	°C	215	226
Flash Point, PMCC	ISO 2719, ASTM D93	°C	200	220
Foam Sequence I	ISO 6247, ASTM D892	mls	10/0	10/0
Water Separability at 54°C	ISO 6614, ASTM D1401	Mins	15	15
Air Release Value	ISO 9120, ASTM D3427	Mins	8	8
FZG Fail Stage (A8.3/90)	ISO 14635-1, DIN 51354	-	12	12
Rust Test (24 hrs Distilled Water)	ISO 7210, ASTM D665A	-	Pass	Pass
Rust Test (24 hrs Synthetic Sea Water)	ISO 7210, ASTM D665B	-	Pass	Pass
Oxidation Resistance	ASTM D943		>2000	>2000
Cleanliness Class (at the filling point)	ISO 4406	-	16/14/11	16/14/11

Subject to usual manufacturing tolerances.

Hyspin™ ZZ Superclean Range

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