

# AZOLLA ZS



LUBRICATION



TOTAL

## Multipurpose Anti-Wear Hydraulic Oil

### APPLICATIONS

Hydraulic systems.

- **AZOLLA ZS** oils are premium anti-wear hydraulic fluids and lubricants. They meet or exceed the requirements of the leading manufacturers of hydraulic equipment and are available in a wide range of viscosities from ISO 22 to ISO 150.
- **AZOLLA ZS** oils have been specifically designed to be used in all types of hydraulic pumps and motors that require the use of anti-wear hydraulic oils. The appropriate viscosity grade will provide excellent service in plain and anti-friction bearings and moderate service in gear reducers.

### SPECIFICATIONS

International standards

OEM standards

- DIN 51524 Part 2 Category HLP
- ISO 6743/4 Category L-HM
- AFNOR E48603 Category HM; AIST 126, 127
- Bosch Rexroth RE 90220 ; MAG (Cincinnati Machine) P68, P69, P70
- Parker (formerly Denison) HF-0, HF-1, HF-2;
- SEB 18122;
- Vickers I-286-S, M-2950-S

### ADVANTAGES

Long equipment life and high operating reliability.

- High resistance to oxidation and thermal degradation.
- Excellent anti-wear properties.
- Inert towards metals (non-staining and no corrosive wear).
- Good compatibility with elastomers and seals.
- Excellent water-oil separation properties.
- Excellent anti-foaming, anti-corrosion, and anti-oxidation properties.

### CHARACTERISTICS

#### TYPICAL CHARACTERISTICS--AZOLLA ZS

ISO grade	22	32	46	68	100	150
Viscosity at 40°C, cSt (ASTM D 445)	22.0	32.0	46.0	68.0	100.0	150.0
Viscosity at 100°C, cSt (ASTM D 445)	4.2	5.3	6.2	8.7	11.1	14.2
Viscosity Index (ASTM D 2270)	> 99	> 99	> 99	> 99	> 99	> 99
Density @ 60°F, lbs./gal.	7.19	7.24	7.28	7.30	7.35	7.38
Specific Gravity @ 60/60°F	0.861	0.867	0.872	0.874	0.881	0.884
Pour Point, °F (°C) (ASTM D 97)	-20 (-29)	-20 (-29)	-20 (-29)	-15 (-26)	0 (-18)	0 (-18)
Flash Point, COC, °F (°C) (ASTM D 92)	400 (204)	405 (207)	410 (210)	430 (221)	475 (226)	485 (252)
Copper Strip Corrosion (ASTM D 130)	1A	1A	1A	1A	1A	1A
4 Ball Wear Test, mm (ASTM D 2266) (75°C, 40kg, 1 hr @ 1200rpm)	0.45	0.45	0.45	0.45	0.45	0.45
Oxidation Test (ASTM D 943)	>6,500	>6,500	>6,500	6500	6500	6500

**TOTAL Specialties USA, Inc.**

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