



Super S[®] Ashless AW Hydraulic Fluid

Super S[®] Ashless AW Hydraulic Fluid is a high viscosity index hydraulic fluid for use in mobile and industrial equipment requiring environmentally friendly ashless hydraulic fluids. It meets the rigorous specifications of many OEM's and can be used as a service fill or top-off fluid in **John Deere** and **Mahindra** equipment recommending Super-EX 46HN hydraulic oil. These fluids are free of ash-forming components, silicone, and zinc and exhibit very good anti-wear and corrosion protection.

Super S[®] Ashless AW Hydraulic Fluid is formulated with premium Group II base oils that show improved performance and oxidative stability over Group I fluids. Robust zinc-free anti-wear additive package minimizes sludge and provides excellent protection for over **5,000 hours** when tested against **ASTM D943 TOST test**.

Super S[®] Ashless AW Hydraulic Fluids exhibit superior filterability and cleanliness along with excellent water separation and anti-foam characteristics. The advanced additive system allows for filterability to be maintained even when the fluid is heavily contaminated with water.

When exposed to moisture, zinc will hydrolyze and create corrosive by-products that attack the soft metals in transmissions and hydrastats. This hydrolysis may lead to rapid oxidation and formation of varnish and sludge. The new unique formula of Super S[®] Ashless Hydraulic fluids helps extend equipment life by eliminating one of the primary sources of oxidation while also providing outstanding anti-wear performance.

FEATURES

- **Robust zinc-free additives provide protection over a wide range of operating conditions and temperatures**

- **5,000 hr service life as exhibited in the TOST life test**
- **Excellent rust protection; compatible with yellow metals**
- **Anti-wear protection to pumps, motors, valves, and other hydraulic circuit components.**
- **Excellent anti-foam protection**
- **Multi-temperature applications**
- **Low Toxicity with very low acute toxicity to fish and invertebrates and facilitates conventional recycling**
- **Suitable for marine and mobile hydraulic systems**
- **Resistance to mechanical stress extending service life**
- **Compatible with most other mineral based hydraulic fluids**

APPLICATIONS

Super S[®] Ashless AW Hydraulic Fluid Oil may be recommended for applications when a premium quality, anti-wear hydraulic oil is required by equipment manufacturers. The oil is suitable in applications requiring **DIN 51524 Part 3, ISO 11158 HV, ASTM 6158 HV, SAE MS 1004, GB 111181-1-94, Denison HF-O, HF-2, Cincinnati Milacron P-68 (ISO 32), P-69 (ISO 68), and P-70 (ISO 46), Bosch Rexworth RDE 90235, Vickers M-2950-S, 1-286-S, GM LS-2, and Eaton E-FDGN-TB002-E** performance levels. Passes **Vickers 35VQ25 Pump Test**.

Provides excellent performance in stationary and mobile equipment and may be a suitable replacement for factory filled zinc-free hydraulic fluids such as those found in John Deere and Mahindra farm and construction equipment. The high shear-stability of these oils also make them an excellent choice for lubrication of high pressure systems. Zinc-free oils are also designed for use in vane, rotary, gear pumps, and compressors, along with circulating systems and machine tools.



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TYPICAL CHARACTERISTICS

SAE GRADE	32	46	68
Product Code	139	140	141
Viscosity @ 40°C, cSt	32.0	46.0	66.0
Viscosity @ 100°C, cSt	6.52	7.68	10.40
Viscosity Index	163	151	155
Flash Point: °F	350	390	390
Pour Point: °F	-49	-45	-40
Zinc Content, ppm	<20	<20	<20
Low Temperature Pumpability	Pass	Pass	Pass
Dielectric, min. KV	+35	+35	+35
Rust Test	Pass	Pass	Pass
ISO/DIS 4406, min rating	16/14/11	16/14/11	16/14/11

Typical test data are average values only.
 Minor variations which do not affect product performance are to be expected during normal manufacturing