



## Synthetic AW Series Antiwear Hydraulic Oils

### PRODUCT DESCRIPTION

AMSOIL Synthetic AW Series Antiwear Hydraulic Oils are shear-stable, long-life lubricants based on high-quality synthetic oil technology. These oils are formulated with a premium additive system that inhibits oxidation to prevent acid formation and viscosity increase and inhibit rust and foam (providing smooth hydraulic operation). AW Oils contain a very effective zinc-based antiwear/antioxidant additive which controls wear in high-speed, high-pressure vane and gear pumps while meeting the lubrication requirements of axial piston pumps with bronze-on-steel metallurgy. AW Oils meet the requirements for Maximum Efficiency Hydraulic Fluid (mehf) and can lower costs and/or increase productivity in mobile equipment by 6 to 15%. Improved pump efficiency can increase hydraulic power, reduce fuel consumption and improve productivity. They are designed for long life and typically reduce maintenance costs by extending drain intervals and reducing labor costs, repairs and downtime.

### AMSOIL Synthetic Base Oil Technology

AMSOIL synthetic base oils resist thermal and oxidative breakdown and work to prevent carbon and varnish deposits. The very high viscosity indices, low pour points and lack of paraffins (wax) make these good all-season lubricants well-suited for high and low temperature extremes. At high temperatures and pressures, AW Oils provide a good lubricating film and protect components

against wear. During cold-temperature operation, equipment starts easier and the need for preheating with sump heaters is reduced. The AW Series base oils also readily separate from water, preventing oil/water emulsions that inhibit lubrication and allowing for longer lubricant life and easier water drainage from the sump.

### Performance Features

- Extended oil drain intervals
- Antiwear protection for high-pressure systems
- Recommended for gear, vane and piston pumps
- Contain rust, oxidation and foam inhibitors
- Designed for extreme-temperature operation
- Hydrolytically stable and readily separate from water
- Improve mobile equipment efficiency (mehf)

### Application Recommendation

The correct viscosity grades of AMSOIL Synthetic AW Series Antiwear Hydraulic Oils are recommended for high- and low-pressure gear, vane and piston stationary and mobile hydraulic systems. They meet the performance requirements of all major hydraulic manufacturers and are excellent for general purpose use where extended drain intervals are desired and in severe-duty operations where temperature extremes are encountered. Because they are light-bodied and possess very good cold-temperature properties, AWF and AWG are the preferred choices for temperatures below -20°F.

Some applications include machine tools and presses, mobile construction equipment, farming equipment, logging trucks, boom trucks and plastic injection molding machines. The appropriate viscosity grades of AW Oils are also suitable for use in pneumatic tools and spindles.

AMSOIL AW Series Oils are compatible with hydraulic system seals, petroleum hydraulic oils and most synthetic hydraulic oils\*. For optimum performance, it is recommended the system be thoroughly drained and, if warranted, cleaned prior to installation. Oil analysis is recommended to maximize oil drain intervals.

\* Not compatible with phosphate ester or silicone fluids.



## TYPICAL TECHNICAL PROPERTIES

### Synthetic AW Series Antiwear Hydraulic Oils

	AWF ISO 15	AWG ISO 22	AWH ISO 32	AWI ISO 46	AWJ ISO 68
ISO VG — ASTM D-2422	15	22	32	46	68
VK 100°C cSt — ASTM D-445	4.4	5.9	7.3	9.7	12.3
VK 40°C cSt — ASTM D-445	14.8	20.7	32.0	48.0	67.3
Viscosity Index — ASTM D-2270	237	256	205	192	184
SpGr - g/ml — ASTM D-1298	0.8229	0.8363	0.8408	0.8483	0.8514
Density - lb/gal — ASTM D-1298	6.910	6.964	7.001	7.063	7.089
Flash Point °C (°F) — ASTM D-92	172 (341)	174 (345)	228 (442)	230 (446)	237 (459)
Fire Point °C (°F) — ASTM D-92	184 (363)	188 (370)	248 (478)	254 (489)	256 (493)
Pour Point °C (°F) — ASTM D-97	<-60 (<-76)	<-60 (<-76)	-51 (-60)	-47 (-53)	-45 (-49)
Four-Ball Wear Test — ASTM D-4172B (40 kg, 1200 rpm, 75°C, 60 min.)	0.48	0.45	0.45	0.45	0.45
Copper Strip Corrosion Test — ASTM D-130	1A	1A	1A	1A	1A
Foam — ASTM D-892 Sequence I, II, III Test End	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0
Dielectric Strength — ASTM D-877 Voltage, kV AC	43.6	43.6	46.2	45.4	45.4
Demulsibility — ASTM D-1401 Oil/Water/Cuff (min)	40/40/0 (15)	40/40/0 (15)	40/40/0 (10)	40/40/0 (10)	40/40/0 (10)
Rust Test — ASTM D-665 A & B Fresh Water and Synthetic Sea Water	Pass	Pass	Pass	Pass	Pass

### APPLICATIONS OR REQUIREMENTS

- mehf – Maximum Efficiency Hydraulic Fluid
  - Denison HF-0, HF-1 and HF-2
  - Vickers M-2950-S and I-286-S
  - Cincinnati Milacron P-68, P-69 and P-70
  - U.S. Steel 127 and 136
  - Racine, variable volume vane pumps
  - DIN 51524, Part 2 HLP22-HLP68
  - ASTM D-6158 HV
  - AFNOR E 48-603\*
  - Ford M-6C32
  - GM LH-04-1, LH-06-1 and LH-15-1
  - Lee Norse 100-1
  - Jeffrey No. 87
  - BF Goodrich 0152
  - Commercial Hydraulics\*
- \* Except for PM-500 series silver-containing pumps which require R&O additive systems.

### AMSOIL PRODUCT WARRANTY

AMSOIL industrial lubricants are formulated to meet or exceed accepted industry specifications. AMSOIL warrants that the use of its lubricants will not cause mechanical damage to any mechanically-sound equipment when AMSOIL products are used in full compliance with the company's recommendations. However, the purchaser of these lubricants is responsible for determining if these specifications are adequate and proper for the intended application. The AMSOIL warranty is limited to lubricant performance consistent with indicated specifications. No additional warranty, expressed or implied, can be made.

### AMSOIL PRODUCT AVAILABILITY

AMSOIL products are available in 5-gallon pails, 30-gallon drums (AWH only), 55-gallon drums, 275-gallon totes and bulk quantities. For 275-gallon totes, please allow two to four weeks for delivery.

AMSOIL industrial lubricants are stocked in Superior, Wisconsin and in select regional distribution centers throughout the United States and Canada. AMSOIL will stock additional quantities of lubricants or special-order products based on customer requests and regional demands.

AMSOIL products and Dealership information are available from your local AMSOIL Dealer.

