



## Powers-All Hi-Lo Hydraulic AW Oil

**DESCRIPTION:** Powers-All Hi-Lo Hydraulic AW Oils are premium multigrade, anti-wear (AW) hydraulic fluids for use in off-road equipment and other hydraulic systems that experience fluctuations in fluid temperatures from cold morning start-up to extended heavy usage in hot weather. In many cases, stationary systems can also benefit by staying within optimum operating viscosity range as sump temperatures can change throughout a work shift.

**BENEFITS:** Powers-All Hi-Lo Hydraulic AW Oils are designed for reduced variance of viscosity in the working fluid as the temperature changes. Highly refined base oils are used and fortified with shear stable polymeric additives. This helps retain hydraulic efficiency and affords better protection of precision components. These **High Viscosity Index (HVI)** fluids offer the following benefits:

- High dielectric strength\*
- Excellent anti-wear protection
- Wider useful temperature range
- Excellent foam control and release of entrained air
- Superior oxidation control and rust/corrosion protection
- Very good water separation (demulsibility) and hydrolytic stability
- Very low pour point temperatures and improved cold pumping characteristics

**APPLICATION:** Powers-All Hi-Lo Hydraulic AW Oils are recommended for both high and low pressure hydraulic systems subject to wide temperature fluctuations and where an oil with dielectric (insulating) properties may be required. This includes mobile construction, aerial lift buckets, garbage collecting equipment, tree trimming and fruit picking equipment, marine systems, and hydraulic control systems for machine tools and presses and hydraulic elevators, hoists, and lifts. These products meet the performance requirements for the following applications:

- B F Goodrich 0152
- Cincinnati Machine P-68, P-70, P-69
- Denison HF-0 (Rev. J)
- DIN 51524, Part 3 HVLP
- FMC 40 P0014-C, 40 P0013-C, 83052
- Jeffrey No. 87
- Lee-Norse 100-1
- Poclain Multi-grade Specification
- Racine Model S, variable vol. pump
- Eaton Vickers 1-286-S, M-2950-S
- Swedish SHS Multi-grade
- ISO 11158, Family H, Type HV



40 South Fifth Street Waterbury CT 06708  
247 Northampton Street Easthampton MA 01027

# PRODUCT INFORMATION



## POWERS-ALL HI-LO Hydraulic AW OILS

### Typical Properties

Product Grade		ISO 15	ISO 22	ISO 32	ISO 46	ISO 68	ISO 100
Product Code	Test Method	PA334215	PA334222	PA334240	PA334244	PA334268	PA334300
Viscosity, cSt @ 40°C	ASTM D 445	15	22	32	46	68	100
Viscosity, cSt @ 100°C	ASTM D 445	4.0	5.1	6.4	8.2	10.1	12.5
Viscosity Index	ASTM D 2270	175	170	157	153	132	120
Oxidation Stability, hrs.	ASTM D 943	5,000+	5,000+	5,000+	5,000+	4,000+	3,000+
Pour Point, °F	ASTM D 97	-58	-56	-48	-48	-32	-30
Flash Point, COC, °F	ASTM D 92	310	370	405	420	430	430
Rust Test, A & B	ASTM 665	pass	pass	pass	pass	pass	pass
Dielectric Strength*, kV	ASTM D 877	35	35	35	35	n/a	n/a

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

**\*Note:** Dielectric properties are measured at the point of manufacture (when packaged) at select manufacturing sites. In a clean, dry environment, **Powers-All Hi-Lo Hydraulic AW Oils ISO 15, 22, 32 and 46** typically meet a dielectric strength of 35kV (ASTM D877).

\* Once containers are open, the dielectric strength cannot be expected to remain at its original value. Containers should be kept tightly sealed and stored in a clean, dry environment.

\*Dielectric performance applies to original packaged goods only.



**40 South Fifth Street Waterbury CT 06708**  
**247 Northampton Street Easthampton MA 01027**

01/19