



# Product Bulletin

## PREMIUM HFO AW HYDRAULIC OILS

### DESCRIPTION

**BRAD PENN® Premium HFO AW Hydraulic Oils** are zinc-containing anti-wear hydraulic oils formulated with high-quality paraffinic base oils and a carefully selected additive system to provide superior wear protection performance even under the most severe operating conditions. They are suitable for use in a wide variety of both high and low pressure industrial and mobile hydraulic systems utilizing either vane or piston pumps. **BRAD PENN® Premium HFO AW Hydraulic Oils** have excellent thermal and oxidation stability to minimize varnish and deposit formation and extend service life.

### PERFORMANCE ADVANTAGES

- Exceptional anti-wear protection to maximize hydraulic system component life
- Excellent hydrolytic stability – resists additive decomposition and the formation of sludge and acids in the presence of moisture
- Outstanding rust and corrosion protection for all system components including yellow metals (copper and its alloys) commonly found in hydraulic pumps and systems
- Superior oxidation and foam inhibitors offer protection against thermal degradation and air entrainment

### APPLICATION

**BRAD PENN® Premium HFO AW Hydraulic Oils** are recommended for applications where a premium quality zinc-containing anti-wear hydraulic oil is required. Examples include hydraulic presses, winches, hoists, mobile construction equipment, machine tools, air compressors, steering gears and more. May also be used in compressors and other applications calling for the use of a non-detergent motor oil.

**BRAD PENN® Premium HFO AW Hydraulic Oils** meet or exceed the performance requirements of the following manufacturers and/or specifications:

Denison HF-0 (hybrid pump), HF-1 and HF-2	U.S Steel 127 and 136
Eaton Vickers M-2950-S and I-286-S	DIN 51524 Part 2
Parker Hannifin HPD	Bosch Rexroth (Variable Volume Vane Pump)
General Motors LH-06-1, LH-04-1, LH-03-1 and LS-2	JCMAS HK
Cincinnati Machine P-68 (AW 32), P-70 (AW 46) and P-69 (AW 68)	



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**BRAD PENN<sup>®</sup>**  
**Premium HF0 AW Hydraulic Oils - Typical Properties**

<b>ISO Viscosity Grade</b>	<b>Test Method</b>	<b>32</b>	<b>46</b>	<b>68</b>
API Gravity	ASTM D-1298A	32.3	31.6	30.9
Density, lbs/gal (g/L)	Calculated	7.19 (862)	7.22 (866)	7.26 (869)
Viscosity, cSt @ 40°C	ASTM D-445	32.0	46.0	68.0
Viscosity, cSt @ 100°C	ASTM D-445	5.5	6.9	8.7
Viscosity Index	ASTM D-2270	105	105	106
Pour Point, °C (max)	ASTM D-5949	-33	-30	-30
Flash Point, °F	ASTM D-92	425	430	440
Color	ASTM D-1500	1.0	1.0	1.0
Rust Test	ASTM D-665 A&B	Pass	Pass	Pass
Oxidation Stability, hrs.	ASTM D-943	4,000	5,000	3,800
Foam Stability	ASTM D-892	Pass	Pass	Pass
Demulsibility @ 130°F	ASTM D-1401	Pass	Pass	Pass
Cincinnati Machine		P-68	P-70	P-69
<b>Product Code</b>		<b>7533</b>	<b>7546</b>	<b>7568</b>