



Product Bulletin

PREMIUM R&O AW HYDRAULIC OILS

BRAD PENN[®] Premium R&O AW Hydraulic Oils are antiwear (AW) hydraulic oils formulated from high-quality base oils and a carefully selected additive system to offer outstanding thermal stability. They are designed for a wide variety of applications.

BRAD PENN[®] Premium R&O AW Hydraulic Oils utilize a zinc dithiophosphate antiwear additive system to impart outstanding wear protection, providing long component life. Additionally, these products offer the following benefits:

- Easy filterability
- Excellent rust protection
- Outstanding anti-foam protection
- Good low temperature properties for cold ambient temperatures
- Exceptional antiwear protection to pumps, motors, valves and other critical hydraulic components
- Excellent hydrolytic stability in the presence of water - will not contribute to the formation of corrosive reactants or metal etching acids.
- Extremely low pump part weight losses are encountered in the ASTM D-2882 Vane Pump Wear Test as well as the Vickers 35VQ25 and Denison T5D-42 Pump Wear Tests

BRAD PENN[®] Premium R&O AW Hydraulic Oils are recommended for applications where a premium quality antiwear hydraulic oil is required. The additive system satisfies the requirements for both high and low pressure industrial and mobile hydraulic systems which call for: Denison HF-0, HF-1, and HF-2, Vickers I-286-S or M-2950-S, Cincinnati Machine P-68, P-69, and P-70, DIN 51524, Part 2, U.S. Steel 127, Racine variable volume vane pumps, as well as various other commercial hydraulic systems, with the exception of those containing silver plated parts which require a non-zinc type hydraulic oil. Specific applications include machine tools and presses, mobile construction equipment, air compressors, speed reducers, winches, and steering gears.



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BRAD PENN[®]
Premium R&O AW Hydraulic Oils - Typical Properties

ISO Viscosity Grade	Test Method	32	46	68	100	150
API Gravity, 60°F	ASTM D-4052	30.9	30.5	30.0	30.1	29.0
Density, lbs/gal (g/L)	Calculated	7.225 (866)	7.289 (873)	7.296 (874)	7.29 (874)	7.357 (882)
Viscosity, cSt @ 40°C	ASTM D-445	32.0	46.0	68.0	100.0	149.5
Viscosity, cSt @ 100°C	ASTM D-445	5.3	6.9	8.8	11.4	15.0
Viscosity, SUS @ 100°F	ASTM D-2161	165	237	352	521	788
Viscosity, SUS @ 210°F	ASTM D-2161	44.0	49.3	55.9	65.4	76.1
Viscosity Index	ASTM D-2270	95	109	100	99	100
Pour Point, °F (°C)	ASTM D-5949	-30 (-33) (max)	-25 (-30) (max)	-25 (-30) (max)	-10 (-21)	-16.6 (-27)
Flash Point, COC, °F (°C)	ASTM D-92	400 (204)	410 (210)	430 (220)	440 (226)	500 (260)
KF Moisture, ppm	ASTM D-6304	200 (max)	200 (max)	200 (max)	200 (max)	200 (max)
Color	ASTM D-1500	1.0	1.0	1.0	2.0	2.0
Rust Test	ASTM D-665 A&B	Pass	Pass	Pass	Pass	Pass
Oxidation Stability Performance, hrs.	ASTM D-943	3,000+	2,500+	2,000+	2,000+	2,000+
Cincinnati Machine		P-68	P-70	P-69	N/A	N/A
Product Code		7380	7381	7382	7384	7385