



Product Bulletin

PENN-GRADE 1[®] HIGH PERFORMANCE OILS

BRAD PENN[®] *PENN-GRADE 1*[®] High Performance Oils are specially formulated using high quality *PENN-GRADE*[™] base stocks and select additive technologies to meet the stringent lubricating demands of high-performance, highly stressed, street and racing engines. They deliver excellent shock load and high temperature protection to heavily stressed engine parts including bearings, camshafts, rings, and pistons. They reduce internal friction for increased horsepower output while maintaining their strong lubricating film protection even under the most demanding torque and extreme temperature conditions. These high performance formulations also provide excellent antifoaming and shear stability characteristics, exceptional high temperature protection from thermal breakdown, outstanding film strength, and strong antiwear properties.

BRAD PENN[®] *PENN-GRADE 1*[®] High Performance Oils have a distinct green color and are available in six viscosity grades to meet virtually all lubricating requirements of high performance street and racing engines. The **Partial Synthetic SAE 0W-30** is a low viscosity oil tailored to maximize horsepower in engines that use this type of engine oil. It contains strong detergent, dispersant and ZDDP anti-wear additives to help protect critical engine parts. The **SAE 40, SAE 50** and "**Nitro**" **70** products are suitable for use in most naturally aspirated, turbocharged, or supercharged gasoline engines.

BRAD PENN[®] *PENN-GRADE 1*[®] Partial Synthetic SAE 10W-30 and SAE 20W-50 High Performance Oils are formulated with a typical TBN of 10.6 to provide a high level of detergency for protection against bearing corrosion and piston deposits in both turbocharged and non-turbocharged engines. These engine oils provide outstanding "heavy load" bearing protection on heavily stressed engine parts. The synthetic component of these engine oils enhances the protection afforded at high and low temperature extremes.

BRAD PENN[®] *PENN-GRADE 1*[®] SAE 40 and SAE 50 High Performance Oils provide a mono-grade alternative and offer a typical TBN of 9.5. They are fortified with a unique antiwear agent proven to be highly effective in the regime of extremely stressed engines.

BRAD PENN[®] *PENN-GRADE 1*[®] "Nitro" 70 High Performance Oil is specifically formulated for gas, alcohol, and nitromethane fueled engines that experience extreme torque, load, and high temperature conditions. The initial high viscosity of the oil allows for excessive dumping of fuel ("blow by") into the lubricating fluid while maintaining critical protection for expensive, high performance racing engines and their parts.



AMERICAN REFINING GROUP, INC.

Lubricants & Specialty Products Division • 77 North Kendall Avenue • Bradford, PA 16701 • 814.368.1200 • www.amref.com

BRAD PENN[®]
PENN-GRADE 1[®] High Performance Oils - Typical Properties

SAE Grade	Test Method	0W-30	10W-30	20W-50	40	50	70
API Gravity, 60°F	ASTM D-1298A	35.6	30.0	29.0	27.5	26.8	26.7
Density, lbs/gal (g/L)	Calculated	7.05 (845)	7.30 (875)	7.341 (880)	7.41 (888)	7.436 (891)	7.45 (892)
Viscosity, cSt @ 40°C	ASTM D-445	63.5	68.6	159.0	150	218.5	314.8
Viscosity, cSt @ 100°C	ASTM D-445	11.0	10.8	20.0	15.5	20.0	28.0
Viscosity, SUS @ 100°F	ASTM D-2161	323	351	820	785	1,150	1,660
Viscosity, SUS @ 210°F	ASTM D-2161	64.0	63.0	101	82	101	138
Viscosity Index	ASTM D-2270	170	138	140	108	106	114
CCS, cP	ASTM D-5293	6,000 @ (-35°C)	6,500 @ (-25°C)	4,600 @ (-15°C)	N/A	N/A	N/A
MRV, cP	ASTM D-4598	20,600 @ (-40°C)	41,000 @ (-25°C)	35,700 @ (-20°C)	N/A	N/A	N/A
HTHS @ 150°C, cP	ASTM D-4683	3.38	3.54	6.20	N/A	N/A	N/A
Pour Point, °F (°C)	ASTM D-5949	-54 (-48)	-27 (-33) (max)	-33 (-36)	0 (-18)	5 (-15)	20 (-6)
Flash Point, COC, °F (°C)	ASTM D-92	385 (196)	400 (204)	420 (216)	425 (218)	440 (227)	450 (232)
Zinc, Mass %	ASTM D-6481	0.150	0.150	0.150	0.150	0.150	0.150
Phosphorous	ASTM D-6481	0.134	0.140	0.140	0.140	0.140	0.140
Color	ASTM D-1500	Green	Green	Green	Green	Green	Green
TBN	ASTM D-2896	9.0	10.6	10.6	9.5	9.5	9.5
Sulfated Ash, mass %	ASTM D-874	1.2	1.2	1.2	1.0	1.0	1.0
Product Code		7126	7150	7119	7140	7115	7117