



Product Bulletin

PENN-GRADE 1[®] MULTI-GRADE HIGH PERFORMANCE OILS

BRAD PENN[®] PENN-GRADE 1[®] Multi-grade 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.

BRAD PENN[®] PENN-GRADE 1[®] Multi-grade High Performance Oils 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 good antifoaming and shear stability characteristics, excellent high temperature protection from thermal breakdown, outstanding film strength, and strong antiwear properties.

BRAD PENN[®] PENN-GRADE 1[®] Multi-grade High Performance Oils have a distinct green color and are available in five **multi-grade** viscosities 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.

BRAD PENN[®] PENN-GRADE 1[®] Partial Synthetic SAE 10W-30, 10W-40, 15W-40 and SAE 20W-50 Multi-grade 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.

The following manufacturers endorse Penn Grade 1[®] High Performance Oils:

- *Koerner Racing Cams Tucson, AZ www.koernerracing.com*
- *Cam Motion, Inc. Baton Rouge, LA www.cammotion.com*
- *Howard Cams Oshkosh, WI www.howardscams.com*
- *Schneider Racing Cams San Diego, CA www.schneidercams.com*
- *Crower Cams San Diego, CA www.crower.com*
- *Crane Cams Daytona Beach, FL www.cranecams.com*



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[®] Multi-grade High Performance Oils - Typical Properties

SAE Grade	Test Method	0W-30	10W-30	10W-40	15W-40	20W-50
API Gravity, 60°F	ASTM D-1298A	35.6	30.0	30.9	29.8	29.0
Density, lbs/gal (g/L)	Calculated	7.05 (845)	7.30 (875)	7.27	7.32	7.341 (880)
Viscosity, cSt @ 40°C	ASTM D-445	63.5	68.6	109	113	159.0
Viscosity, cSt @ 100°C	ASTM D-445	11.0	10.8	15.6	15.5	20.0
Viscosity, SUS @ 100°F	ASTM D-2161	323	351	559	581	820
Viscosity, SUS @ 210°F	ASTM D-2161	64.0	63.0	81.9	81.5	101
Viscosity Index	ASTM D-2270	170	138	154	145	140
CCS, cP	ASTM D-5293	6,000 @ (-35°C)	6,500 @ (-25°C)	6,300 @ (-25°C)	5050 @ (-20°C)	4,600 @ (-15°C)
MRV, cP	ASTM D-4684	20,600 @ (-40°C)	41,000 @ (-25°C)	28,150 @ (-30° C)	21,175 @ (-25°C)	35,700 @ (-20°C)
HTHS @ 150° C, cP	ASTM D-4683	3.38	3.54	4.23	4.52	6.20
Pour Point, °F (°C)	ASTM D-5949	-54 (-48)	-27 (-33) (max)	-43.6(-42)	-43.6 (-42)	-33 (-36)
Flash Point, COC, °F (°C)	ASTM D-92	385 (196)	400 (204)	400 (204)	400 (204)	420 (216)
Zinc, Mass %	ASTM D-6481	0.150	0.150	0.150	0.150	0.150
Phosphorous	ASTM D-6481	0.134	0.140	0.140	0.140	0.140
Color	ASTM D-1500	Green	Green	Green	Green	Green
TBN	ASTM D-2896	9.0	10.6	10.6	10.6	10.6
Sulfated Ash, mass %	ASTM D-874	1.2	1.2	1.2	1.2	1.2
Product Code		7126	7150	7144	7158	7119