



Product Bulletin

HEAVY DUTY DIESEL ENGINE OILS

BRAD PENN[®] Heavy Duty Diesel Engine Oils are formulated with high quality paraffinic base oils and a select additive system to provide excellent performance and protection in today's high output, high performance heavy-duty diesel engines. They are fortified with advanced technology detergents, dispersants, antiwear, and anti-corrosion additives to provide protection against engine sludge, varnish formation, scuffing and wear, and high temperature oil thickening.

BRAD PENN[®] Multi-Grade SAE 15W-40 Heavy Duty Diesel Engine Oil is a premium engine oil designed for all-season use in over-the-road and off-road diesel equipment. It provides the good low temperature flow properties of SAE 15W grade for cold engine start-ups, and the higher temperature protection properties of SAE 40 grade at normal engine operating temperature. It is recommended for mixed fleet applications that include naturally aspirated and turbo charged diesel engines as well as gasoline engines requiring API Service Category SJ defined on the Typical Properties chart (see next page). It also provides effective control of acidic by-products formed as a result of diesel fuel combustion. **BRAD PENN[®] Heavy Duty Diesel Engine Oil, SAE 15W-40** is fit for use in the following applications: API Service Categories CH-4, CG-4, CF-4, CF/SJ; Allison C-4; Caterpillar ECF-1-a; Mack EO-M Plus, EO-M; Cummins CES 20076, CES 20072; DDC MTU Type 1; Ford M2C153-E; Volvo VDS-2.

BRAD PENN[®] Mono-Grade Heavy Duty Diesel Engine Oils are available in three viscosity grades and contain the same high quality base oils and high performance additives used in the multi-viscosity diesel engine oils. The SAE 30 and SAE 40 viscosities are fit for use in the following applications: API Service Categories CF, CF-2/SG, Ford M2C153-C, Caterpillar Series 3, Mack EO-K, MIL-L-2104C, Detroit Diesel Corporation Series 53, 71 & 92 two-stroke cycle diesel engines. The SAE 10W viscosity meets API Service Category CF.



AMERICAN REFINING GROUP, INC.

77 North Kendall Avenue • Bradford, Pennsylvania • 16701

Phone: 814.368.1200 • Fax 814.368.1219 • www.amref.com • ISO 9001:2008

BRAD PENN[®]
Heavy Duty Diesel Engine Oils – Typical Properties

SAE Grade		15W-40	10W	30	40
API Service	Test Method	CH-4/SJ	CF	CF, CF-2/SG	CF, CF-2/SG
Gravity, API	ASTM D-4052	29.0	30.8	27.8	26.2
Density, lbs/gal (g/L)	Calculated	7.36 (.882)	7.26 (.870)	7.40 (.887)	7.47 (.895)
Viscosity, cSt @ 40°C	ASTM D-445	112	36.5	93.3	153.6
Viscosity, cSt @ 100°C	ASTM D-445	15.2	6.6	11.3	15.5
Viscosity, SUS @ 100°F	ASTM D-2161	576	187	480	796
Viscosity, SUS @ 210°F	ASTM D-2161	81.1	47.6	65.0	81.8
Viscosity Index	ASTM D-2270	142	124	107	103
CCS, @ -25°C	ASTM D-5293	N/A	3,800cP	N/A	N/A
MRV, @ -30°C	ASTM D-4684	N/A	12,225	N/A	N/A
MRV, @ -25°C < 35 Pa, cP	ASTM D-4598	58000	N/A	N/A	N/A
CCS @ -20 °C, cP	ASTM D-5293	7000 (max)	N/A	N/A	N/A
Pour Point, °C (°F)	ASTM D-5949	-33 (-27.4) (max)	-36 (-32.8) (max)	-30 (-22) (max)	-24 (-11.2) (max)
Flash Point, °F (°C)	ASTM D-92	415 (212)	365 (184)	420 (216) (min)	450 (232)
Color	ASTM D-1500	5.0	3.0	5.0	5.0
TBN	ASTM D-974	9.0	9.0	7.2	7.2
Sulfated Ash, Mass %	ASTM D-874	1.2	1.2	0.95	0.95
Product Code		7190	7191	7193	7194