



# 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 Heavy Duty Diesel Engine Oils** are premium engine oils designed for all-season use in over-the-road and off-road diesel equipment. They are available in two multi-viscosity grades; **SAE 10W-30** and **SAE 15W-40**. They provide the good low temperature flow properties of SAE 10W and 15W grades for cold engine start-ups, and the higher temperature protection properties of SAE 30 and 40 grades at normal engine operating temperature. They are recommended for mixed fleet applications that include naturally aspirated and turbo charged diesel engines as well as gasoline engines requiring API Service Categories defined on the Typical Properties chart (see next page). They also provide 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® Heavy Duty Diesel Engine Oil, SAE 10W-30** is an API CJ-4/SM qualified oil and is fit for use in the following applications: Caterpillar ECF-1-a, ECF-2 and ECF-3; Ford WSS-M2C-171E; API Service Categories CI-4 PLUS, CI-4, CH-4, CG-4, CF-4, CF/SL, SJ.

**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.



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**BRAD PENN<sup>®</sup>**  
**Heavy Duty Diesel Engine Oils – Typical Properties**

<b>SAE Grade</b>		<b>10W-30</b>	<b>15W-40</b>	<b>10W</b>	<b>30</b>	<b>40</b>
API Service	<b>Test Method</b>	CJ-4/SM	CH-4/SJ	CF	CF, CF-2/SG	CF, CF-2/SG
Gravity, API	ASTM D-4052	31.3	29.0	30.8	27.8	26.2
Density, lbs/gal (g/L)	Calculated	7.238 (.867)	7.36 (.882)	7.26 (.870)	7.40 (.887)	7.47 (.895)
Viscosity, cSt @ 40°C	ASTM D-445	83	112	36.5	93.3	153.6
Viscosity, cSt @ 100°C	ASTM D-445	12.20	15.4	6.4	11.3	15.5
Viscosity, SUS @ 100°F	ASTM D-2161	425	576	187	480	796
Viscosity, SUS @ 210°F	ASTM D-2161	68	81.1	47.6	65.0	81.8
Viscosity Index	ASTM D-2270	147	142	124	107	103
CCS, @ -25°C	ASTM D-5293	6,200cP	N/A	7,000cP (max)	N/A	N/A
MRV, @ -30°C	ASTM D-4684	35,000	N/A	12,225	N/A	N/A
MRV, @ -25°C < 35 Pa, cP	ASTM D-4598	N/A	58000	N/A	N/A	N/A
CCS @ -20 °C, cP	ASTM D-5293	N/A	7000 (max)	N/A	N/A	N/A
Pour Point, °C (°F)	ASTM D-5949	-35 (-36)	-33 (-27.4) (max)	-36 (-32.8) (max)	-30 (-22) (max)	-24 (-11.2) (max)
Flash Point, °F (°C)	ASTM D-92	410 (210)	415 (212)	365 (184)	420 (216) (min)	450 (232)
Color	ASTM D-1500	4.0	5.0	3.0	5.0	5.0
TBN	ASTM D-974	8.7	9.0	9.0	7.2	7.2
Sulfated Ash, Mass %	ASTM D-874	1.0	1.2	1.2	0.95	0.95
<b>Product Code</b>		<b>7198</b>	<b>7190</b>	<b>7191</b>	<b>7193</b>	<b>7194</b>