



# PRODUCT DATA SHEET



## HEAVY DUTY DIESEL ENGINE OIL

**Heavy Duty Diesel Engine Oil**, commonly known as Bel-Ray 21<sup>st</sup> Century Motor Oil, is a high performance motor oil for heavy-duty diesel and gasoline engines. **Heavy Duty Diesel Engine Oil** is formulated to meet or exceed the performance requirements of many of today's off-highway engines. The Extreme Pressure capabilities of **Heavy Duty Diesel Engine Oil** reduce wear significantly extending the life of rings, liners and main bearings. **Heavy Duty Diesel Engine Oil** provides superior soot handling and acid neutralization capabilities making it suitable for modern diesel engines fitted with EGR systems or in areas of the world where fuel sulfur levels vary significantly. **Heavy Duty Diesel Engine Oil** will extend drain intervals and component life significantly reducing engine oil related costs.

### *Applications*

**Heavy Duty Diesel Engine Oil** is suitable for use in equipment specifying engine oils meeting the following specifications:

API SL/CI-4	CAT ECF-1-a	Mack EO-M Plus
ACEA E7-04 Issue 2 (2007)	Global DHD-1	Mack EO-N
ACEA A3/B3-04	Cummins CES 20078	MB Approval 228.1
ACEA E7-08 (2008)	Detroit Diesel DDC 93K215	MB Approval 228.3
ACEA E5-02 (2002)	Volvo VDS-3	MB Approval 229.1
CAT ECF-2	Volvo VDS-2	

### *Features and Benefits*

- |   |   |
|---|---|
| ◆ Total Base Number of 14                       | Neutralizes the acids formed during combustion allowing for extended drain intervals.                       |
| ◆ Non-linear VI Improver                        | Extremely shear stable. Does not lose viscosity during normal operation.                                    |
| ◆ Superior dispersant and detergent chemistries | Reduce deposit formation. Improved soot handling characteristics, necessary in modern EGR equipped engines. |

### *General Description*

**Heavy Duty Diesel Engine Oil** is an API SL/CI-4 engine oil. **Heavy Duty Diesel Engine Oil** utilizes a shear stable VI Improver and a chemical system for use in modern diesel and gasoline engines.

**Product No. 61560, 61580, 61510**

# HEAVY DUTY DIESEL ENGINE OIL

## TYPICAL PROPERTIES

<b><u>Product No.</u></b>	<b><u>61560</u></b>	<b><u>61580</u></b>	<b><u>61510</u></b>
SAE Engine Oil Grade	10W-30	15W-40	20W-50
Viscosity, ASTM D445			
@ 40°C, cSt	72.0	115	140
@ 100°C, cSt	11.0	15.9	18.3
Viscosity Index, ASTM D2270	143	147	146
Base Fluid Type	Mineral oil with viscosity modifiers	Mineral oil with viscosity modifiers	Mineral oil with viscosity modifiers
Total Base Number, ASTM D974, mg KOH/g	14	14	14
Cold Crank Simulator, ASTM D5293, cP (°C)	6960 (-25)	5225 (-20)	3342 (-15)
Falex EP Test, ASTM D3233 Method B			
Non-seizure Load, lbf	3500	2500	2750
Noack Volatility, TGA Method, % Loss	<15	<15	<15
Flash Point, ASTM D93			
°C	184	181	182
(°F)	363	358	360
Specific Gravity, ASTM D1298, 60/60°F	0.8857	0.8898	0.8867
Color	Amber	Amber	Amber