



Raysun Motive EMD 135

High performance, zinc-free and chlorine-free railroad engine oils

Raysun Motive EMD 135 series are high performance, zinc-free and chlorine-free oils specially designed to provide excellent engine cleanliness and oil filter life in the modern railroad diesel locomotive engines. These oils are formulated with an additive package endorsed by engine manufacturers' and meet the requirements of newer diesel locomotive engines of General Electric (GE) and Electro Motive Division (EMD) of General Motors. Though the newer engines consume significantly less oil and operate at higher temperatures, the excellent TBN retention property and improved oxidation resistance of Raysun Motive EMD 135 provide superior service and facilitate extended drain intervals. These oils exceed the performance requirements of Locomotive Maintenance Officers Association (LMOA) Generation 5 and API CF/CF-2 and are available in two viscosity grades, viz. SAE 20W -40 and .SAE 40

Advantages

- Exceptional detergency/dispersancy provides excellent engine cleanliness, especially engine top decks
- Excellent in-service retention of TBN facilitates extended drain intervals
- High thermo-oxidative stability protects against sludge formation providing cleaner engines
- Zinc-free formulation protects silver bearings against corrosion
- Non-chlorinated additive package helps in reducing used oil disposal costs
- SAE 20W-40 helps provide reduced oil consumption, fuel economy, longer oil drain intervals and effective lubrication and oil flow at lower temperature

Applications

- Medium speed two-cycle and four-cycle railroad engines, including newer diesel locomotive engines of GE and EMD of General Motors
- Railroad diesel locomotive engines specifying LMOA Generation 5 quality oils
- Marine and stationary engines for power generation or off-shore drilling requiring zinc-free oils
- Detroit Diesel 149 series engines operating under severe conditions
- Stationary engines requiring API CF and CF-2 quality oils

Performance level & Specifications

- LMOA Generation 5
- API CF, CF-2
- EMD of General Motors
- GE as Generation 4 Long Life Oils

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Grades		ASTM Method	Specification
40	20W-40		
0.890	0.893	D 1298	Density @ 15°C, kg/l
15.1	15.5	D 445	Viscosity @ 100°C, cSt.
102	114	D 2270	Viscosity Index
252	228	D 92	Flash Point, °C
-18	-24	D 97	Pour Point, °C
13.2	13.2	D 2896	TBN, mg KOH/g
< 10	< 10	D 5158	Zinc, ppm

Note: "All of the results are typical and the results of each batch are presented in the COA sheet."