

API CJ-4 / Mack T12

300 Hours, Fuel Sulfur 15 ppm

SPECIFICATIONS

This procedure is approved for API CJ-4 and Mack EO-O Premium Plus.

OBJECTIVE

This procedure evaluates an oil's ability to minimize cylinder liner, piston ring and bearing wear in engines with heavy exhaust gas recirculation (EGR).

FIELD SERVICE SIMULATED

Heavy-duty on-highway truck operations after 2007 are simulated.

PROCEDURE FIXTURE

The test engine is a modified Mack E7 E-Tech 460 rated at 460 bhp and 1800 rpm, with EGR and 2002 low-swirl with combustion system.

PROCEDURE PARAMETERS

This is a 300-hour engine procedure. The first 100 hours are at rated speed and power to generate soot; the last 200 hours are over-fueled at peak torque rpm to maximize the wear rates on the rings and liner.

CRITICAL PARTS EVALUATED

Piston ring wear, cylinder liner wear, lead bearing corrosion, oil consumption, and oxidation are evaluated.

USED OIL ANALYSIS

Used oil analysis includes viscosity @ 100°C soot, TBN, TAN, lead content, FTIR oxidation.

PASS/FAIL CRITERIA

| Parameter | Anchor | Merit Wt | Max | Min |
|------------|--------|----------|-----|-----|
| RWL | 70 | 200 | 105 | 35 |
| LWS | 20 | 250 | 24 | 12 |
| Lead | 25 | 200 | 35 | 10 |
| Lead delta | 10 | 200 | 15 | 0 |
| O/C | 65 | 150 | 85 | 50 |
| Merits | 1000 | | | |



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