

Engine Oil Aeration Test (ASTM D6894)

Specifications

- API CH-4, CI-4 and CJ-4

Objective

- Determine the ability of an engine lubricant to resist aeration during engine operation.

Field Service Simulated

- This test provides a comparative index of the aeration resistance of engine lubricants used in medium- and heavy-duty truck diesel engines.

Test Fixture

- 1994 Navistar 7.3 L, V8, turbocharged, compression-ignition engine, rated at 160 kW at 3000 rpm.
- The engine uses the HEUI (hydraulically actuated, electronically controlled) unit injector fuel injection system.

Test Parameters

- The test engine is operated for 20 hours using 500 ppm diesel fuel at rated speed (3000 rpm) and load (160 kW) with the following controlled parameters:

Coolant outlet temp, °C	100
Fuel temp, °C	66
Inlet air temp, °C	30
Inlet air restriction, kPa	3.7

Test Parts Evaluation

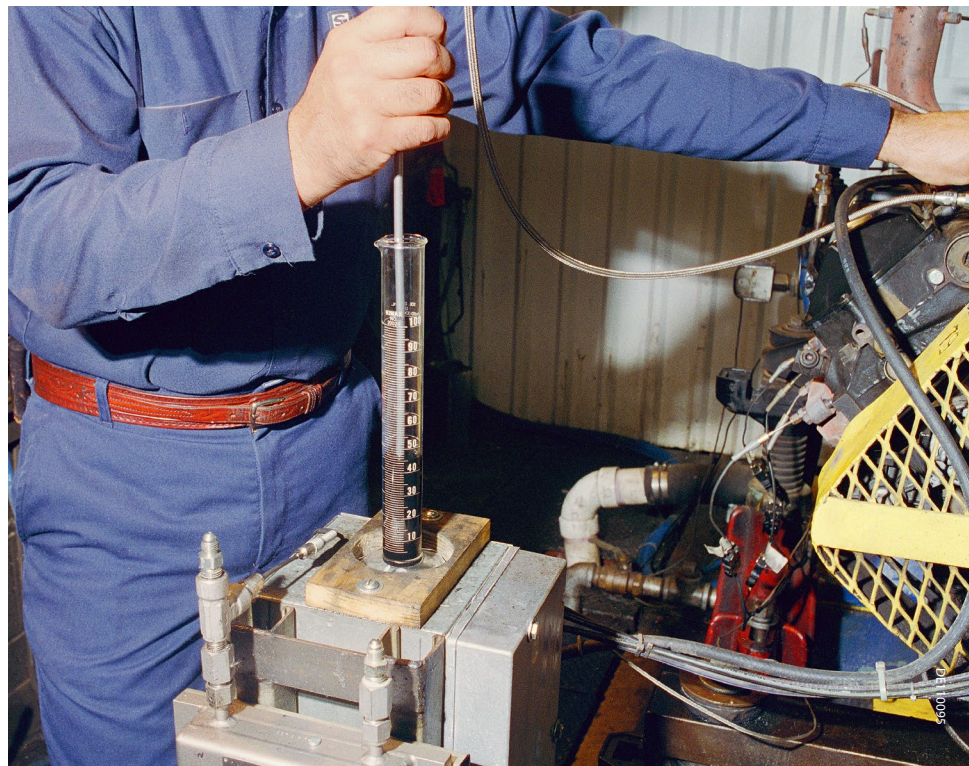
- None.

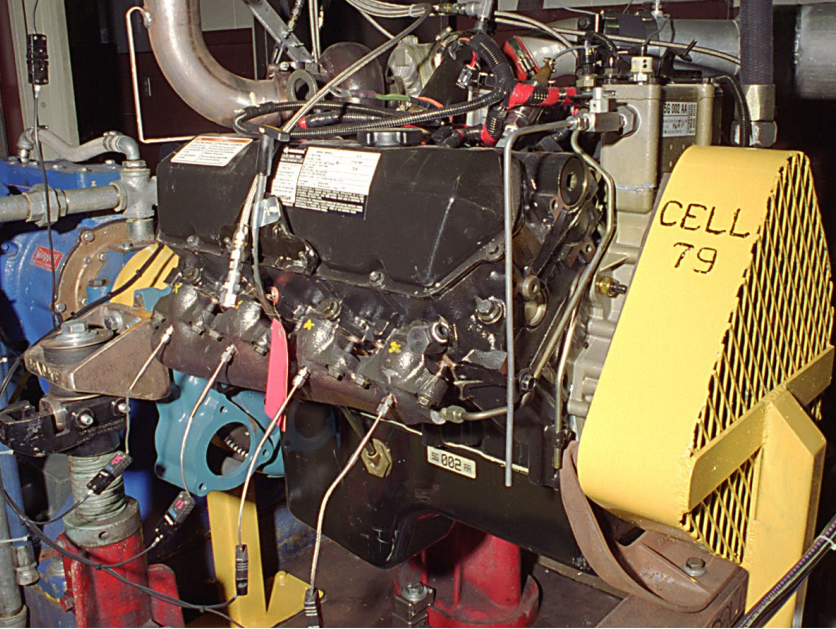
Used Lubricant Analysis

- Entrained air in lubricant (ASTM D0000 (evaluation at 1, 5 and 20 hours)
- Wear metals (ASTM D5185)

Pass/Fail Criteria

- At 20 hours, the maximum allowable amount of air entrained in the oil is 8%.





ET11703

We welcome your inquiries.
For additional information,
please contact:

Jose Starling
Sr. Research Engineer
210.522.2902
jose.starling@swri.org

Fuels and Lubricants Research Division
Southwest Research Institute
6220 Culebra Road • P.O. Drawer 28510
San Antonio, Texas 78228-0510

lubricanttesting.swri.org



Southwest Research Institute is an independent, nonprofit, applied engineering and physical sciences research and development organization using multidisciplinary approaches to problem solving. The Institute occupies 1,200 acres in San Antonio, Texas, and provides more than 2.3 million square feet of laboratories, test facilities, workshops and offices for more than 2,600 employees who perform contract work for industry and government clients.



Benefiting government,
industry and the public through
innovative science and technology

An Equal Employment Opportunity/Affirmative Action Employer • Race/
Color/Religion/Sex/Sexual Orientation/Gender Identity/National Origin/
Disabled/Veteran • Committed to Diversity in the Workplace

210.522.2122
ask@swri.org

Like. Share. Follow. Listen.



swri.org

©2020 Southwest Research Institute.
All rights reserved.