



Standard Test Method for Evaluation of Diesel Engine Oils in T-9 Diesel Engine¹

This standard is issued under the fixed designation D 6483; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers an engine test procedure for evaluating diesel engine oils for performance characteristics, including lead corrosion and wear of piston rings and cylinder liners.² This test method is commonly referred to as the Mack T-9.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. See Annex A5 for specific safety precautions.*

1.4 Table of Contents:

Scope	1
Referenced Documents	2
Terminology	3
Summary of Test Method	4
Significance of Use	5
Apparatus	6
General Description	6.1
Test Engine	6.2
Mack T-9 Test Engine	6.2.1
Engine Cooling System	6.2.2
Engine Oil System	6.2.3
Auxiliary Oil System	6.2.4
Blowby Meter	6.2.5
Air Supply and Filtration	6.2.6
Fuel Supply	6.2.7
Intake Manifold Temperature Control	6.2.8
Engine Fluids	7
Test Oil	7.1
Test Fuel	7.2
Engine Coolant	7.3
Cleaning Materials	7.4
Preparation of Apparatus at Rebuild	8

Cleaning of Parts	8.1
Valves, Seats, Guides, and Springs	8.2
Cylinder Liner, Piston, and Piston Ring Assembly	8.3
Injectors and Injection Pump	8.4
Assembly Instructions	8.5
Measurements	8.6
System Time Responses	8.7
Procedure	9
Pretest Procedure	9.1
Engine Start-Up	9.2
Engine Shutdown	9.3
Test Cycle	9.4
Oil Addition/Drain	9.5
Oil Samples	9.6
Oil Consumption Calculations	9.7
Fuel Samples	9.8
Periodic Measurements	9.9
Blowby	9.10
Centrifugal Oil Filter Mass Gain	9.11
Oil Filter ΔP Calculation	9.12
Inspection of Engine, Fuel, and Oil	10
Pre-Test Measurements	10.1
Post-Test Measurements	10.2
Oil Inspection	10.3
Fuel Inspections	10.4
Oil Consumption	10.5
Lab and Engine Test Stand Calibration/Non-Ref Requirements	11
Calibration Frequency	11.1
Calibration Reference Oils	11.2
Test Numbering	11.3
New Laboratories and New Test Stands	11.4
Test Stand and Engine Calibration	11.5
Test Results	11.6
Reference and Non-Reference Oil Test Requirements	11.7
Non-Reference Oil Test Result Severity Adjustments	11.8
Report	12
Reporting Reference Test Results	12.1.1
Deviations from Test Operational Limits	12.1.2
Electronic Transmission of Test Results	12.1.3
Precision and Bias	13
Precision	13.1
Bias	13.2
Keywords	14
Annexes	
Report Forms	Annex A1
Sensor Locations	Annex A2
Procurement of Test Materials	Annex A3
Instructions for Measuring T-9 Cylinder Sleeves Using the Taylor Hobson Form Talysurf	Annex A4
Safety Precautions	Annex A5
Data Dictionary	Annex A6
TBN Measurement Procedure for T-9 Samples	Annex A7
TAN Measurement Procedure for T-9 Samples	Annex A8
Determination of Operational Validity	Annex A9

¹ This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.B0 on Automotive Lubricants.

Current edition approved May 10, 2003. Published July 2003. Originally approved in 1999. Last previous edition approved in 1999 as D 6483-99.

² The ASTM Test Monitoring Center will update changes in this test method by means of Information Letters. This edition includes all Information Letters through 02-1. Information Letters may be obtained from ASTM Test Monitoring Center, 6555 Penn Avenue, Pittsburgh, PA 15206-4489, Attention: Administrator.