



Designation: D7899 – 24

Standard Test Method for Measuring the Merit of Dispersancy of In-Service Engine Oils with Blotter Spot Method¹

This standard is issued under the fixed designation D7899; 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 a procedure for determination of the merit of dispersancy of diesel crankcase engine oils as well as other types of engine oils where pollutants of diverse sources such as soot from combustion, metallic particles from wear, corrosion of mechanical parts, and insoluble products resulting from the oxidation of the oil may contaminate the lubricant.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—It is not the intent of this test method to establish or recommend normal, cautionary, warning, or alert limits for any machinery. Such limits should be established in conjunction with advice and guidance from the machinery manufacturer and maintenance group.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

D4175 Terminology Relating to Petroleum Products, Liquid Fuels, and Lubricants

D7418 Practice for Set-Up and Operation of Fourier Trans-

form Infrared (FT-IR) Spectrometers for In-Service Oil Condition Monitoring

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this test method, refer to Terminology **D4175**.

3.1.2 *diesel crankcase engine oils, n*—an engine oil used in the crankcase of the internal combustion diesel engine.

3.1.2.1 *Discussion*—It may contain additives to enhance certain properties. Inhibition of engine rusting, deposit formation, valve train wear, oil oxidation, and foaming are examples.

3.1.3 *diesel engine, n*—a reciprocating or rotary engine in which ignition of the main fuel charge, as it is introduced to the combustion chamber, shall be by the heat of compression of the charge of combustion air, during regular operation of the engine from idle speeds up to full speed, regardless of whether miscellaneous methods to augment such heat of compression are used to facilitate starting of the engine under normal conditions or under low ambient temperature conditions or low intake air temperature conditions.

3.1.3.1 *Discussion*—Engines that are designed to operate with a continuously hot spot or bulb or other device to facilitate ignition or combustion, or both, of low cetane fuels, or any fuels slow to ignite or to burn, or both, shall be considered to be diesel engines for purposes of this test method.

3.1.4 *engine oil, n*—a liquid that reduces friction or wear, or both, between the moving parts within an engine; removes heat, particularly from the underside of pistons; and serves as a combustion gas sealant for piston rings.

3.1.4.1 *Discussion*—It may contain additives to enhance certain properties. Inhibition of engine rusting, deposit formation, valve train wear, oil oxidation, and foaming are examples.

3.1.5 *oxidation, n*—of engine oil, the reaction of the oil with an electron acceptor, generally oxygen, which can produce deleterious acidic or resinous materials often manifested as sludge formation, varnish formation, viscosity increase, or corrosion, or a combination thereof.

¹ This test method is under the jurisdiction of ASTM Committee **D02** on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee **D02.96.02** on Chemistry for the Evaluation of In-Service Lubricants.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

*A Summary of Changes section appears at the end of this standard