Designation: D4985 – 10 (Reapproved 2015)

Standard Specification for Low Silicate Ethylene Glycol Base Engine Coolant for Heavy Duty Engines Requiring a Pre-Charge of Supplemental Coolant Additive (SCA)[1]

This standard is issued under the fixed designation D4985; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This specification covers the requirements for low silicate ethylene glycol base engine coolants for cooling systems of heavy-duty engines. When concentrates are used at 40 to 60 % concentration by volume in water, or when prediluted glycol base engine coolants (50 volume % minimum) are used without further dilution, they will function effectively to provide protection against corrosion, freezing to at least −36.4°C (−33.5°F), and boiling to at least 108°C (226°F).

NOTE 1—This specification is based on the knowledge of the performance of engine coolants prepared from new or virgin ingredients. A separate specification exists (Specification D6210) for heavy-duty engine coolants which may be prepared from recycled or reprocessed used coolant or reprocessed industrial-source ethylene glycol.

1.2 Coolants meeting this specification require an initial charge of a supplemental coolant additive (SCA) and require regular maintenance doses of an SCA to continue the protection in certain operating heavy-duty engine cooling systems, particularly those of the wet cylinder liner-in-block design. The SCA additions are defined by and are the primary responsibility of the engine manufacturer or vehicle manufacturer. If they provide no instructions, follow the SCA supplier's recommended instructions.

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

1.4 *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.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D512 Test Methods for Chloride Ion In Water
D516 Test Method for Sulfate Ion in Water
D1119 Test Method for Percent Ash Content of Engine Coolants
D1120 Test Method for Boiling Point of Engine Coolants
D1121 Test Method for Reserve Alkalinity of Engine Coolants and Antirusts
D1122 Test Method for Density or Relative Density of Engine Coolant Concentrates and Engine Coolants By The Hydrometer
D1123 Test Methods for Water in Engine Coolant Concentrate by the Karl Fischer Reagent Method
D1126 Test Method for Hardness in Water
D1177 Test Method for Freezing Point of Aqueous Engine Coolants
D1287 Test Method for pH of Engine Coolants and Antirusts
D1293 Test Methods for pH of Water
D1384 Test Method for Corrosion Test for Engine Coolants in Glassware
D1881 Test Method for Foaming Tendencies of Engine Coolants in Glassware
D1882 Test Method for Effect of Cooling System Chemical Solutions on Organic Finishes for Automotive Vehicles
D2570 Test Method for Simulated Service Corrosion Testing of Engine Coolants
D2809 Test Method for Cavitation Corrosion and Erosion-Corrosion Characteristics of Aluminum Pumps With Engine Coolants
D3306 Specification for Glycol Base Engine Coolant for Automobile and Light-Duty Service
D3634 Test Method for Trace Chloride Ion in Engine Coolants

[1] This specification is under the jurisdiction of ASTM Committee D15 on Engine Coolants and Related Fluids and is the direct responsibility of Subcommittee D15.07 on Specifications.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. 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**

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