



Designation: D 4656 – 98

AMERICAN SOCIETY FOR TESTING AND MATERIALS
100 Barr Harbor Dr., West Conshohocken, PA 19428
Reprinted from the Annual Book of ASTM Standards. Copyright ASTM

Standard Specification for Prediluted Aqueous Ethylene Glycol Base Engine Coolant (50 Volume % Minimum) for Automobiles and Light-Duty Service¹

This standard is issued under the fixed designation D 4656; 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 specification covers the requirements for a prediluted aqueous ethylene glycol (50 volume % minimum) base engine coolant for use in automobiles and light duty vehicles. When used without further dilution, this product functions effectively during both summer and winter in automotive and other light-duty engine cooling systems to provide adequate cooling system performance.

1.2 The units quoted in this specification are to be regarded as standard. The values given in parentheses are approximate equivalents provided for information purposes 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.*

NOTE 1—This specification applies to automobiles and light-duty service. A separate specification for a prediluted ethylene glycol base coolant for heavy-duty engine service is under development with D 5345.

2. Referenced Documents

2.1 ASTM Standards:

- D 512 Test Methods for Chloride Ion in Water²
- D 516 Test Method for Sulfate Ion in Water²
- D 1119 Test Method for Ash Content of Engine Coolants and Antirusts³
- D 1120 Test Method for Boiling Point of Engine Coolants³
- D 1121 Test Method for Reserve Alkalinity of Engine Coolants and Antirusts³
- D 1122 Test Method for Density or Relative Density of Engine Coolant Concentrates and Engine Coolants by the Hydrometer³
- D 1126 Test Method for Hardness in Water²
- D 1177 Test Method for Freezing Point of Aqueous Engine Coolants³
- D 1193 Specification for Reagent Water²

¹ This specification is under the jurisdiction of ASTM Committee D-15 on Engine Coolants and is the direct responsibility of Subcommittee D15.07 on Prediluted Engine Coolant.

Current edition approved April 10, 1998. Published December 1998. Originally published as D 4656 – 91. Last previous edition D 4656 – 95.

² Annual Book of ASTM Standards, Vol 11.01.

³ Annual Book of ASTM Standards, Vol 15.05.

- D 1287 Test Method for pH of Engine Coolants and Antirusts³
- D 1293 Test Methods for pH of Water²
- D 1384 Test Method for Corrosion Test for Engine Coolants in Glassware³
- D 1881 Test Method for Foaming Tendencies of Engine Coolants in Glassware³
- D 1882 Test Method for Effect of Cooling System Chemical Solutions on Organic Finishes for Automotive Vehicles³
- D 1888 Test Methods for Particulate and Dissolved Matter in Water⁴
- D 2570 Test Method for Simulated Service Corrosion Testing of Engine Coolants³
- D 2809 Test Method for Cavitation Erosion-Corrosion Characteristics of Aluminum Pumps with Engine Coolants³
- D 3306 Specification for Ethylene Glycol Base Engine Coolant for Automobile and Light Duty Service³
- D 3634 Test Method for Trace Chloride Ion in Engine Coolants³
- D 4327 Test Method for Anions in Water by Chemically Suppressed Ion Chromatography²
- D 4340 Test Method for Corrosion of Cast Aluminum Alloys in Engine Coolants Under Heat-Rejecting Conditions³
- D 4725 Terminology for Engine Coolants³
- D 5345 Specification for Prediluted Aqueous Ethylene Glycol Base Low-Silicate Engine Coolant (50 Volume Percent Minimum) for Heavy-Duty Engines Requiring an Initial Charge of Supplemental Coolant Additive (SCA)³
- D 5827 Test Method for Analysis of Engine Coolant for Chloride and Other Anions by Ion Chromatography³
- D 5931 Test Method for Density and Relative Density of Engine Coolant Concentrates and Aqueous Engine Coolants by Digital Density Meter³

3. General Requirements

3.1 Prediluted aqueous ethylene glycol base engine coolant shall consist essentially of water and ethylene glycol and shall contain suitable corrosion inhibitors, dye and a foam suppressor. Other glycols, such as propylene and diethylene, may be

⁴ Discontinued—See 1990 Annual Book of ASTM Standards, Vol 11.01.