



Designation: D 3306 – 00a

Standard Specification for Glycol Base Engine Coolant for Automobile and Light-Duty Service¹

This standard is issued under the fixed designation D 3306; 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 ethylene glycol or propylene glycol base engine coolants used in automobiles or other light duty service cooling systems. When concentrates are used at 40 to 70 % 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 freezing, boiling, and corrosion.

1.2 The coolants governed by this specification are categorized as follows:

Coolant Type	Description
I	Ethylene glycol base concentrate
II	Propylene glycol base concentrate
III	Ethylene glycol predilute (50 vol %)
IV	Propylene glycol predilute (50 vol %)

NOTE 1—This specification is based on the knowledge of the performance of engine coolants prepared from new or virgin ingredients. Separate specifications exist for engine coolants prepared from recycled or reprocessed used coolant or reprocessed industrial-source glycols.

1.3 The values stated in SI units are to be regarded as the standard. The values 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.*

NOTE 2—This specification applies to automobiles and light duty service. Specifications D 4985, D 6210, and D 6211 exist for heavy duty engine service.

2. Referenced Documents

2.1 ASTM Standards:

D 512 Test Methods for Chloride Ion in Water²

D 516 Test Methods for Sulfate Ion in Water²

D 1119 Test Method for Percent Ash Content of Engine Coolants and Antirusts³

¹ This specification is under the jurisdiction of ASTM Committee D15 on Engine Coolants and is the direct responsibility of Subcommittee D15.07 on Specifications. Current edition approved September 10, 2000. Published November 2000. Originally published as D 3306 – 74. Last previous edition D 3306 – 00.

² Annual Book of ASTM Standards, Vol 11.01.

³ Annual Book of ASTM Standards, Vol 15.05.

TABLE 1 General Requirements

Property	Specified Values	ASTM Test Method
Color	Distinctive	...
Effect on nonmetals	No adverse effect	under consideration

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 and Relative Density of Engine Coolant Concentrates and Engine Coolants by the Hydrometer³

D 1123 Test Methods for Water in Engine Coolant Concentrate by the Karl Fischer Reagent Method³

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

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, Solids, or Residue in Water⁴

D 2570 Test Method for Simulated Service Corrosion Testing of Engine Coolants³

D 2809 Test Method for Cavitation Corrosion and Erosion-Corrosion Characteristics of Aluminum Pumps with Engine Coolants³

D 3321 Test Method for Use of the Refractometer for Field Test Determination of the Freezing Point of Aqueous Engine Coolants³

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

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