



Designation: E1177 – 19

Standard Specification for Engine Coolant Grade Glycol¹

This standard is issued under the fixed designation E1177; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This specification covers commercial products, engine coolant grade ethylene glycol and propylene glycol, including virgin glycols and those derived from the recycling of vehicle engine coolants and industrial source glycols.

1.2 Types EG-1 and PG-1 cover glycols with sufficiently low limits on components to allow a blended coolant to meet most OEM (Original Equipment Manufacturer) specifications. These types will probably be virgin materials, although redistillation could produce a sufficiently pure product. Types EG-2 and PG-2 cover glycol that will be suitable for many coolants. These types can be either redistilled or virgin.

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

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

1.5 *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

D1122 Test Method for Density or Relative Density of Engine Coolant Concentrates and Engine Coolants By The Hydrometer

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.

Current edition approved Oct. 1, 2019. Published November 2019. Originally approved in 1987. Last previous edition approved in 2014 as E1177-14. DOI: 10.1520/E1177-19.

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.

D1123 Test Methods for Water in Engine Coolant Concentrate by the Karl Fischer Reagent Method
D1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)
D1287 Test Method for pH of Engine Coolants and Antirusts
D1613 Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products
D3634 Test Method for Trace Chloride Ion in Engine Coolants
D4052 Test Method for Density, Relative Density, and API Gravity of Liquids by Digital Density Meter
D4725 Terminology for Engine Coolants and Related Fluids
D5827 Test Method for Analysis of Engine Coolant for Chloride and Other Anions by Ion Chromatography
D5931 Test Method for Density and Relative Density of Engine Coolant Concentrates and Aqueous Engine Coolants by Digital Density Meter
D6130 Test Method for Determination of Silicon and Other Elements in Engine Coolant by Inductively Coupled Plasma-Atomic Emission Spectroscopy
D7736 Test Method for Determination of Acids and Glycol Esters in Glycols
E202 Test Methods for Analysis of Ethylene Glycols and Propylene Glycols
E300 Practice for Sampling Industrial Chemicals
E394 Test Method for Iron in Trace Quantities Using the 1,10-Phenanthroline Method

3. Requirements

3.1 Engine coolant grade ethylene glycol or propylene glycol, including virgin glycols and those derived from the recycling of vehicle engine coolants and industrial source glycols, shall conform to the chemical and physical property requirements in **Table 1**.

4. Sampling

4.1 Sample ethylene or propylene glycol in accordance with the appropriate sections of Practice **E300** for liquid samples.

5. Test Methods

5.1 Test each composite sample for the chemical and physical requirements listed in **3.1**.