



# Standard Specification for Engine Coolant Grade Propylene Glycol<sup>1</sup>

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## 1. Scope

1.1 This specification covers propylene glycol used to formulate engine coolants.

1.2 *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.*

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

## 2. Referenced Documents

### 2.1 ASTM Standards:

D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)<sup>2</sup>

D 3634 Test Method for Trace Chloride Ion in Engine Coolants<sup>3</sup>

D 5827 Test Method for Determination of Chloride in Engine Coolant by Ion Chromatography<sup>3</sup>

D 4052 Test Method for Density and Relative Density of Liquids by Digital Density Meter<sup>4</sup>

E 202 Test Methods for Analysis of Ethylene Glycols and Propylene Glycols<sup>3</sup>

E 300 Practice for Sampling Industrial Chemicals<sup>3</sup>

E 394 Test Method for Iron in Trace Quantities Using the

1,10-Phenanthroline Method<sup>3</sup>

## 3. Requirements

3.1 Engine coolant grade propylene glycol shall conform to the chemical and physical properties in Table 1.

## 4. Sampling

4.1 Sampling for testing to this specification shall be in accordance to the applicable sections of Practice E 300.

## 5. Packaging, Package Markings and Transportation

5.1 The packaging, labeling and transportation of commercial quantities shall conform to applicable federal, state and local regulations. Conformance is the responsibility of the manufacturer and shipper.

## 6. Keywords

6.1 engine coolants; propylene glycol

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 06.03.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 15.05.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 05.03.

**TABLE 1 Chemical and Physical Properties**

Requirement	Value	ASTM Test Method
Propylene glycol, mass %	98.5 min	E 202
Dipropylene glycol, mass, %	1.0 max	E 202
Other glycols, mass %	0.2 max	E 202
Total glycol, mass, %	99.5 min	E 202
Relative density, 20/20°C	1.0375 to 1.0390	D 4052
Water, mass %	0.5 max	E 202
Acidity, as acetic acid, mass %	0.01 max	E 202
Chloride ion, ppm	5 max	D 3634, D 5827
Iron, ppm	1.0 max	E 394
Appearance	clear, no suspended matter	E 202
Color, Pt/Co scale	25 max	E 202, D 1209

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