



Standard Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)¹

This standard is issued under the fixed designation D 1209; 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 Department of Defense.

1. Scope

1.1 This test method describes a procedure for the visual measurement of the color of essentially light colored liquids (Note 1). It is applicable only to materials in which the color-producing bodies present have light absorption characteristics nearly identical with those of the platinum-cobalt color standards used.

NOTE 1—A procedure for estimating color of darker liquids, described for soluble nitrocellulose base solutions, is given in Methods D 365.

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.* For specific hazard statements see Section 6.

1.3 For specific hazard information, see the Material Safety Data Sheet.

2. Referenced Documents

2.1 ASTM Standards:

D 156 Test Method for Saybolt Color of Petroleum Products (Saybolt Chromometer Method)²

D 365 Test Methods for Soluble Nitrocellulose Base Solutions³

D 1193 Specification for Reagent Water⁴

D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)⁵

E 202 Test Methods for Analysis of Ethylene Glycols and Propylene Glycols⁶

E 346 Test Methods for Analysis of Methanol⁶

¹ This test method is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.35 on Solvents, Plasticizers, and Chemical Intermediates.

Current edition approved May 10, 2000. Published July 2000. Originally published as D 1209 – 52. Last previous edition D 1209 – 97.

² *Annual Book of ASTM Standards*, Vol 05.01.

³ *Annual Book of ASTM Standards*, Vol 06.02.

⁴ *Annual Book of ASTM Standards*, Vol 11.01.

⁵ *Annual Book of ASTM Standards*, Vol 06.04.

⁶ *Annual Book of ASTM Standards*, Vol 15.05.

3. Significance and Use

3.1 The property of color of a solvent varies in importance with the application for which it is intended, the amount of color that can be tolerated being dependent on the color characteristics of the material in which it is used. The paint, varnish, and lacquer solvents, or diluents commercially available on today's market normally have little or no color. The presence or absence of color in such material is an indication of the degree of refinement to which the solvent has been subjected or of the cleanliness of the shipping or storage container in which it is handled, or both.

3.2 For a number of years the term “water-white” was considered sufficient as a measurement of solvent color. Several expressions for defining “water-white” gradually appeared and it became evident that a more precise color standard was needed. This was accomplished in 1952 with the adoption of Test Method D 1209 using the platinum-cobalt scale. This test method is similar to the description given in *Standard Methods for the Examination of Water and Waste Water*⁷ and is referred to by many as “APHA Color.” The preparation of these platinum-cobalt color standards was originally described by A. Hazen in the *American Chemical Journal*⁸ in which he assigned the number 5 (parts per ten thousand) to his platinum-cobalt stock solution. Subsequently, in their first edition (1905) of *Standard Methods for the Examination of Water*, the American Public Health Association, using exactly the same concentration of reagents, assigned the color designation 500 (parts per million) which is the same ratio. The parts per million nomenclature is not used since color is not referred directly to a weight relationship. It is therefore recommended that the incorrect term “Hazen Color” should not be used. Also, because it refers primarily to water, the term “APHA Color” is undesirable. The recommended nomenclature for referring to the color of organic liquids is “Platinum-Cobalt Color, Test Method D 1209.”

⁷ *Standard Methods for the Examination of Water and Waste Water*, M. Franson, Ed., American Public Health Assoc., 14th ed., 1975, p. 65.

⁸ Hazen, A., “New Color Standard for Natural Waters,” *American Chemical Journal*, Vol XIV, 1892, p. 300–310.