



Designation: E805 – 12a (Reapproved 2017)

Standard Practice for Identification of Instrumental Methods of Color or Color-Difference Measurement of Materials¹

This standard is issued under the fixed designation E805; 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 practice covers the documentation of instrumental measurement of color or color difference for current communication or for future reference. The practice is applicable to instrumental measurements of materials where color is seen by reflected, transmitted or emitted light and any combinations of one or more of these processes. The practice is recommended for documentation of methodology in interlaboratory color-measurement programs.

1.2 Providing an adequate identification of an instrumental measure of color or color-difference involves documenting the metadata necessary for archiving and future use of the measurement data collected. The metadata can be divided in five parts:

1.2.1 Nature and source of available samples and the form of specimens actually measured,

1.2.2 Instrumental conditions of measurement, including instrument geometrical and spectral conditions of measurement,

1.2.3 Standards used,

1.2.4 Data acquisition procedure, and

1.2.5 Color scales employed.

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 whoever uses this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

1.4 *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.*

¹ This practice is under the jurisdiction of ASTM Committee E12 on Color and Appearance and is the direct responsibility of Subcommittee E12.04 on Color and Appearance Analysis.

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2. Referenced Documents

2.1 ASTM Standards:²

D156 Test Method for Saybolt Color of Petroleum Products (Saybolt Chromometer Method)

D1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)

D1500 Test Method for ASTM Color of Petroleum Products (ASTM Color Scale)

D1535 Practice for Specifying Color by the Munsell System

D1544 Test Method for Color of Transparent Liquids (Gardner Color Scale)

D2244 Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

D5386 Test Method for Color of Liquids Using Tristimulus Colorimetry

D6166 Test Method for Color of Pine Chemicals and Related Products (Instrumental Determination of Gardner Color)

E179 Guide for Selection of Geometric Conditions for Measurement of Reflection and Transmission Properties of Materials

E259 Practice for Preparation of Pressed Powder White Reflectance Factor Transfer Standards for Hemispherical and Bi-Directional Geometries

E284 Terminology of Appearance

E308 Practice for Computing the Colors of Objects by Using the CIE System

E313 Practice for Calculating Yellowness and Whiteness Indices from Instrumentally Measured Color Coordinates

E991 Practice for Color Measurement of Fluorescent Specimens Using the One-Monochromator Method

E1164 Practice for Obtaining Spectrometric Data for Object-Color Evaluation

E1247 Practice for Detecting Fluorescence in Object-Color Specimens by Spectrophotometry

E1331 Test Method for Reflectance Factor and Color by

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.