



## Standard Test Method for Color of Solid Aromatic Hydrocarbons and Related Materials in the Molten State (Platinum-Cobalt Scale)<sup>1</sup>

This standard is issued under the fixed designation D 1686; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This test method covers the visual measurement of the color of thermally stable solids melting below 150°C. It is applicable only to materials in which the color-producing bodies present have light absorption characteristics quite similar to those of the standards used.

1.2 The following applies to all specified limits in this test method: for purposes of determining conformance with this test method, an observed value or a calculated value shall be rounded off “to the nearest unit” in the last right-hand digit used in expressing the specification limit, in accordance with the rounding-off method of Practice E 29.

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 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 Sections 7 and 9.

### 2. Referenced Documents

#### 2.1 ASTM Standards:

- D 1193 Specification for Reagent Water<sup>2</sup>
- D 3438 Practice for Sampling and Handling Naphthalene, Maleic Anhydride, and Phthalic Anhydride<sup>3</sup>
- D 3852 Practice for Sampling and Handling Phenol and Cresylic Acid<sup>3</sup>
- E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications<sup>4</sup>

#### 2.2 Other Document:

OSHA Regulations, 29 CFR, paragraphs 1910.1000 and 1910.1200<sup>5</sup>

### 3. Significance and Use

3.1 Color by this test method is a measure of color-producing impurities present in the thermally stable solids.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D-16 on Aromatic Hydrocarbons and Related Chemicals and is the direct responsibility of Subcommittee D16.0C on Oxygenated Aromatics.

Current edition approved Jan. 10, 1996. Published March 1996. Originally published as D 1686 – 59 T. Last previous edition D 1686 – 95.

<sup>2</sup> Annual Book of ASTM Standards, Vol 11.01.

<sup>3</sup> Annual Book of ASTM Standards, Vol 06.04.

<sup>4</sup> Annual Book of ASTM Standards, Vol 14.02.

<sup>5</sup> Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

This test method is suitable for setting specifications and for use as an internal quality control tool.

### 4. Apparatus

4.1 *Color Comparison Tubes*—Matched 100-mL, tall-form Nessler tubes, provided with ground-on, optically clear, glass caps. Tubes should be selected so that the height of the 100-mL graduation mark is  $300 \pm 3$  mm above the bottom of the tube. The use of heat-resistant tubes is preferred for safety reasons.

4.2 *Color Comparator*—A color comparator constructed to permit visual comparison of light transmitted through tall-form, 100-mL Nessler tubes in the direction of their longitudinal axes. The comparator should be constructed so that white light is reflected off a white plate and directed with equal intensity through the tubes, and should be shielded so that no light enters the tubes from the side.

4.3 *Oven*—An oven, preferably of the forced draft type and capable of maintaining a constant temperature  $\pm 1^\circ\text{C}$  in the range up to 150°C. Alternatively, the use of an aluminum heating block provided with proper temperature control or other similar equipment is permissible.

### 5. Reagents

5.1 *Purity of Reagents*—Reagent grade chemicals shall be used in all tests. Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available.<sup>6</sup> Other grades may be used, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination.

5.2 *Purity of Water*—Unless otherwise indicated, references to water shall be understood to mean Type IV reagent water conforming to Specification D 1193.

5.3 *Cobalt Chloride* ( $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$ ).

5.4 *Hydrochloric Acid* (sp gr 1.19)—Concentrated hydrochloric acid (HCl).

5.5 *Potassium Chloroplatinate* ( $\text{K}_2\text{PtCl}_6$ ).

<sup>6</sup> *Reagent Chemicals, American Chemical Society Specifications*, American Chemical Society, Washington, DC. For suggestions on the testing of reagents not listed by the American Chemical Society, see *Analar Standards for Laboratory Chemicals*, BDH Ltd., Poole, Dorset, U.K., and the *United States Pharmacopoeia and National Formulary*, U.S. Pharmaceutical Convention, Inc. (USPC), Rockville, MD.