



Designation: D1618 – 99 (Reapproved 2011)

# Standard Test Method for Carbon Black Extractables—Transmittance of Toluene Extract<sup>1</sup>

This standard is issued under the fixed designation D1618; 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 measurement of the degree of toluene discoloration by carbon black extractables and is useful in controlling the reaction processes for production of carbon black. This test method may not be applicable to carbon blacks with high extractables.

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

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.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

[D1799 Practice for Carbon Black—Sampling Packaged Shipments](#)

[D1900 Practice for Carbon Black—Sampling Bulk Shipments](#)

[D4483 Practice for Evaluating Precision for Test Method Standards in the Rubber and Carbon Black Manufacturing Industries](#)

## 3. Terminology

3.1 *Definitions:*

3.1.1 *carbon black toluene discoloration, n*— the transmittance, at 425 nm, of the filtrate obtained from the toluene extract of carbon black, compared to that of pure toluene.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D24 on Carbon Black and is the direct responsibility of Subcommittee D24.31 on Non-Carbon Black Components of Carbon Black.

Current edition approved May 1, 2011. Published July 2011. Originally approved in 1965. Last previous edition approved in 2004 as D1618 – 99 (2004). DOI: 10.1520/D1618-99R11.

<sup>2</sup> 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.

## 4. Significance and Use

4.1 The toluene discoloration value provides an estimate of toluene-soluble discoloring residues present on the carbon black.

## 5. Apparatus and Reagent

5.1 *Spectrophotometer*, with tungsten filament lamp, 20-nm maximum spectral bandpass, capable of measuring percent transmittance at a 425-nm wavelength. The instrument is to be operated in accordance with the manufacturer's directions for optimum performance.

5.2 *Cuvets*, rectangular, with an optical light path of 10 mm.

5.3 *Balance*, analytical, with a sensitivity of  $\pm 0.01$  g.

5.4 *Oven*, gravity-convection type, capable temperature regulation within  $\pm 1^\circ\text{C}$  at  $125^\circ\text{C}$  and temperature uniformity within  $\pm 5^\circ\text{C}$ .

5.5 *Pipet*, automatic, bottle-type, 20 cm<sup>3</sup>, with a repeatability of  $\pm 0.1$ .

5.6 *Erlenmeyer Flasks*, 125 cm<sup>3</sup> with ground-glass stopper.

5.7 *Filter Paper*, qualitative grade, medium retention, medium-fast filter speed, 150-mm diameter.

5.8 *Glass Filtering Funnels*, 75-mm inside diameter at the top.

5.9 *Beakers*, 50 or 100 cm<sup>3</sup>, with pouring lips.

5.10 *Wiping Paper*, lint-free.

5.11 *Cotton Swabs*.

5.12 *Fume Hood*, fully enclosed on three sides, with spark-proof fan and motor.

5.13 *Toluene*, analytical reagent grade.

## 6. Sampling

6.1 Samples shall be taken in accordance with Practice [D1799](#) or Practice [D1900](#).

## 7. Standardization of Apparatus

7.1 Turn on the spectrophotometer and allow it to warm for the length of time specified by the manufacturer.