



AMERICAN NATIONAL
STANDARD

ANSI/ASTM D 3392 - 79



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Standard Recommended Practice for CARBON BLACK EXTRACTABLES—LIGHT- ABSORPTION CHARACTERISTICS¹

This Standard is issued under the fixed designation D 3392; 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.

1. Scope

1.1 This recommended practice covers the determination of the light-absorption characteristics of extractables removed from carbon black by 1,2-dichlorobenzene, and measured spectrophotometrically, in this solvent, over the 300 to 600-nm spectral region.

1.2 These extractables may contain polycyclic hydrocarbons formed during carbon black manufacture.

2. Applicable Documents

2.1 ASTM Standards:

D 1509 Testing Carbon Black—Heating Loss²

E 131 Definitions of Terms and Symbols Relating to Molecular Spectroscopy³

E 169 Recommended Practices for General Techniques of Ultraviolet Quantitative Analysis³

E 275 Recommended Practice for Describing and Measuring Performance of Spectrophotometers³

3. Apparatus

3.1 *Spectrophotometer*, capable of measuring accurately and precisely in the 300 to 600-nm spectral region.⁴

3.1.1 The spectrophotometer shall be operated according to the manufacturer's directions for optimum performance.

3.1.2 If the performance of the spectrophotometer must be evaluated, refer to Recommended Practice E 275.

3.2 *Absorption Cells*, 10-mm light path preferred.

3.2.1 The exact light path must be known.

3.2.2 Use cells recommended for use at the

wavelength of interest.

3.3 *Analytical Balance*, having a sensitivity of ± 0.1 mg.

3.4 *Cylinders*, 50-cm³ capacity, graduated to 0.1 cm³, with ground-glass stoppers.

3.5 *Glass Filter Disks*, 11-cm circles.⁵

3.6 *Filter Pulp*.⁶

3.7 Miscellaneous laboratory glassware and equipment necessary to carry out the test as written.

4. Reagent

4.1 *1,2-dichlorobenzene*, with a boiling point range from 179.5 to 180.5°C, and of sufficient purity to allow good instrument performance down to around 300 nm. All current mandatory safety and health precautions and regulations for the safe handling of toxic solvents should be in effect when this solvent is being used.

5. Procedure

5.1 Dry an adequate quantity (5.2.1) of *crushed* carbon black for 1 h at 125°C as described in Method D 1509.

5.1.1 Drying may be eliminated at the discretion of the analyst if it has been proven that

¹ This recommended practice is under the jurisdiction of ASTM Committee D-24 on Carbon Black, and is the direct responsibility of Subcommittee D24.30 on Optical Tests.

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² *Annual Book of ASTM Standards*, Part 37.

³ *Annual Book of ASTM Standards*, Part 42.

⁴ Beckman B, DU or DK-2, or equivalent, has been found satisfactory for this method.

⁵ Reeve Angel 934AH, or its equivalent, has been found satisfactory for this method.

⁶ No. 289 ash-free analytical filter pulp, available from Schleicher and Schuell, Inc., Keene, N. H. 03431, or its equivalent, has been found satisfactory for this method.