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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Specification for Laboratory Filter Papers¹

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1. Scope

1.1 This specification covers two types of filter paper for use in chemical analysis and provides procedures for the complete evaluation of the filter papers.

2. Referenced Documents

- 2.1 *ASTM Standards:*
 - D 774 Test Method for Bursting Strength of Paper²
- 2.2 *TAPPI Standards:*³
 - T413 Ash in Paper
 - T429 Alpha-Cellulose in Paper
 - T509 Hydrogen Ion Concentration (pH) of Paper Extracts—Cold Extraction Method

3. Types and Classes

- 3.1 The types and classes of filter paper are as follows:
- 3.1.1 *Type I*—To be used for qualitative analysis (low ash content):
 - 3.1.1.1 *Class AA*, for very coarse and gelatinous precipitates, very fast flow rate.
 - 3.1.1.2 *Class A*, for coarse and gelatinous precipitates, fast flow rate.
 - 3.1.1.3 *Class B*, for medium-size precipitates, medium flow rate.
 - 3.1.1.4 *Class C*, for fine precipitates, slow flow rate.
 - 3.1.1.5 *Class D*, hardened to facilitate scraping, for fine precipitates, slow flow rate.
 - 3.1.2 *Type II*—to be used for quantitative analysis (ashless papers):
 - 3.1.2.1 *Class E*, for coarse and gelatinous precipitates, fast flow rate.
 - 3.1.2.2 *Class F*, for medium-size precipitates, medium flow rate.
 - 3.1.2.3 *Class G*, for fine precipitates, slow flow rate.

4. Manufacture

- 4.1 The papers shall be made from such materials and by

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² *Annual Book of ASTM Standards*, Vol 15.09.

³ Available from Technical Association of the Pulp and Paper Industry, Technology Park/Atlanta, P.O. Box 105113, Atlanta, GA 30348.

such methods as to ensure compliance with the requirements of Section 10, and shall be clean and free of imperfections that would affect their performance.

4.2 The papers shall be converted into circles, sheets, or any required sizes.

5. General Requirements

5.1 All classes of filter paper shall comply with the requirements given in Table 1 and Table 2 and Section 11.

5.2 The ash content of the Type II circles shall not exceed 0.01 %.

5.3 Class D filter papers shall have a surface hard enough to permit scraping collected precipitates off the sheet.

6. Sampling

6.1 If testing is required, the sample of each class shall be representative of the shipment, and specimens shall be taken at random from at least 3 % of the total packages.

7. Retests

7.1 If the results of the tests indicate noncompliance with the requirements of Table 1 and Table 2, or other factors described within this specification, take another representative sample of the shipment, selecting the specimens from different packages than those from which the first sample was taken.

7.2 Then test the second sample for compliance with this specification.

7.3 If the results of the retests indicate noncompliance with this specification, immediately consult the manufacturer for assistance in rectifying the problem.

8. Packaging and Marking

8.1 Flat circles of filter paper shall be packaged in units of 100 circles of the same diameter. Prefolded or fluted circles shall be packaged according to trade custom.

8.2 Each unit or package shall be marked with the manufacturer's name, size of circles, or catalog and lot number.

9. Test Methods

9.1 The most important tests to be performed are:

9.1.1 *pH Value*—Determine in accordance with TAPPI Method T 509.

9.1.2 *Alpha-Cellulose*—Determine in accordance with TAPPI Method T 429. This test may or may not be used for lot to lot determination.

9.1.3 *Ash Content*—Determine in accordance with Section