

Standard Method of Test for DEGREE OF STAINING OF PAPER BY ALKALI¹



A.S.T.M. Designation: D 723 - 45

ADOPTED, 1945.²

This Standard of the American Society for Testing Materials is issued under the fixed designation D 723; the final number indicates the year of original adoption as standard or, in the case of revision, the year of last revision.

Scope

1. This method of test for determining the degree of staining of paper by alkali is applicable to undyed papers. It can be used with hard-sized (rosin) papers by first removing the major part of the sizing with ether or methanol. It is not recommended for use with pulp.

Apparatus

2. The apparatus shall consist of the following:

(a) *Nessler Tubes*.—A set of six Nessler tubes made with thin, colorless glass, 1 mm. in thickness, having a diameter of 29 to 30 mm., and with the 50-ml. graduation mark about 90 mm. from the bottom outside.

(b) *Precision Pipette*. — A precision pipette of 1-ml. capacity, graduated to 0.01 ml.

Reagents

3. (a) *Potassium Dichromate Solu-*

¹ Under the standardization procedure of the Society, this method is under the jurisdiction of the A.S.T.M. Committee D-6 on Paper and Paper Products.

For further information on this method the following reference may be consulted:

T. Linsey Crossley, "A Quantitative Test for Soap Wrap Paper," *Technical Association Papers*, Technical Assn. Pulp and Paper Industry, Series XX (1937).

² Prior to adoption as standard, this method was published as tentative from 1943 to 1945.

tion.—Dissolve 0.25 g. of $K_2Cr_2O_7$ in a small amount of water and dilute to 1 liter.

(b) *Congo Red Solution*.—Dissolve 0.5 g. of congo red³ in water, and dilute to 1 liter.

(c) *Sodium Hydroxide Solution (1 N)*.

Reference Standards

4. To 50 ml. of the potassium dichromate solution add 0.1 ml. of the congo red solution and mix well. Place different amounts of this mixed solution, such as 0.2, 0.5, 1.0, and 2.0 ml. each, in separate Nessler tubes, dilute to the 50-ml. mark with water, and mix.

NOTE: *Caution*.—As potassium dichromate slowly destroys the congo red color, the solution should not be mixed until immediately before use.

Test Specimen

5. The test specimen shall consist of 3.00 g. of the paper torn into pieces $\frac{1}{4}$ to $\frac{1}{2}$ in. square. With vegetable parchment a finer subdivision of the sample is advisable.

³ Eastman Kodak Co. Congo Red E.K. 770 is recommended.