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Standard Guide for Testing Printing Inks and Related Materials¹

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1. Scope

1.1 This guide covers a list of test methods, practices, and specifications that can be used for the testing and evaluation of printing inks, printed ink films, and substrates used in their production (see Table 1).

1.2 This guide includes methods that were developed to test paints, paint films, and substrates, but may be adapted for use in testing printing inks and printed matter. Tests on raw materials and analytical methods in general have not been included.

NOTE 1—For the purpose of this guide, clear coatings such as overprint varnishes are classed as printing inks.

1.3 Other ASTM standards not specified here may also be applicable.

2. Terminology

2.1 Definitions:

2.1.1 *printing ink*—a colored or pigmented liquid or paste composition that dries to a solid film after application as a thin layer by printing machinery.

2.1.1.1 *Discussion*—Printing inks may contain vehicles, colorants, waxes, solvents, and other additives. Bulk inks are tested for dispersion, tinting strength, density, heat and storage stability, rheology, and printing properties.

2.1.2 *printed ink film*—thin layer of a printing ink deposited onto a substrate by means of a laboratory or production printing press, occasionally by a drawdown or roll-out technique. Printed matter is the usual medium by which inks are tested for appearance properties, drying, and resistance to various agents.

2.1.3 *printing substrate*—material onto which ink is depos-

ited in the production of printed matter. Printing substrates include paper, paperboard, plastic film, glass, and metallic surfaces. In this guide, standards relating to substrates are largely restricted to properties associated with appearance and printability.

3. Test Categories

3.1 For convenience in selection, the test methods, practices, and specifications, listed in this guide are classified into three groups by type of printing process and in subgroups indicating whether the test is conducted on a bulk ink, a printed ink film, or a substrate (see Table 2). The group is given in the left column preceding the test method reference. The classification are a follows:

3.1.1 *Group 1—Applicable in General:*

Class A—Bulk inks.

Class B—Printed ink films.

Class C—Substrates.

3.1.2 *Group 2—Applicable to Low Viscosity or Liquid Inks Associated With Flexography or Gravure:*

Class A—Bulk inks.

Class B—Printed ink films.

Class C—Substrates.

3.1.3 *Group 3—Applicable to High Viscosity or Paste Inks Associated With Letterpress, Lithography, or Silk Screen:*

Class A—Bulk inks.

Class B—Printed ink films.

Class C—Substrates.

4. Precision and Bias

4.1 If available, precision for each test method listed can be found in the latest revision of that test method.

5. Keywords

5.1 printed matter; printing inks; printing substrates; test methods and practices (tabulation of)

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