Designation: D 3430 – 95 (Reapproved 2002)

Standard Test Method for Clarity and Yellowness of Liquid Water-Based Clear Floor Polishes[1]

This standard is issued under the fixed designation D 3430; 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 (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers measurement of the degree of clarity and depth of yellowness of water-based clear floor polishes.

1.2 *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. Terminology

2.1 *Definition:*

2.1.1 *absorbance*—the negative logarithm, to the base 10, of the ratio of the radiant power transmitted through a sample to the radiant power incident upon the sample. Hence, as the clarity decreases or the depth of the yellowness increases the absorbance increases.

3. Significance and Use

3.1 The laboratory technique described in this test method is used to evaluate the clarity and yellowness of water-based "clear" floor polishes for product development or quality control purposes.

4. Apparatus

4.1 *Colorimeter,*[2] equipped with cylindrical 20-mm matched cells. (If 20-mm cells are not available, 10-mm matched cells may be substituted.)

4.2 Any colorimeter having equivalent resolution and sensitivity may be used with the appropriate matched cells.

5. Sampling

5.1 The sample shall be representative of the material to be tested and the portion used for the test shall be representative of the sample itself.

5.2 *Calibration Sample*—Any emulsion polymer that visually exhibits little or no yellowness, selected for dilution (see 6.1).

6. Preparation of Correction Graph

6.1 Prepare minimum of five dilutions of the calibration sample with distilled water so that absorbance reading between 0.00 and 0.16 at 500 nm are obtained. Measure the absorbance at both 500 nm and 400 nm for each dilution (see Section 7).

6.2 Plot the absorbance at 500 nm versus that at 400 nm and fit a straight line through the resulting points starting from the origin (see Fig. 1).

6.3 It is necessary to prepare a correction graph only once for a given instrument and set of cells.

7. Procedure

7.1 *Adjustment of Colorimeter*—Set the colorimeter at 500 nm and at 0 absorbance with distilled water as a blank in one of the matched cells.

7.2 *Absorbance*—Fill the companion cell with sample and place in the cell holder. Read and record the absorbance. This reading is indicative of the degree of turbidity.

7.3 *Adjustment of Colorimeter*—Reset the colorimeter at 400 nm and at 0 absorbance with distilled water as a blank in one of the matched cells.

7.4 *Absorbance*—Read and record the absorbance of the sample. This reading is indicative of the uncorrected yellowness.

7.5 *Correction*—The corrected value for yellowness is the recorded absorbance from 7.2 corrected to 400 nm from the correction graph. Subtract this value from the total absorbance at 400 nm, 7.4. The difference is the absorbance due to yellowness.

8. Report

8.1 Report the absorbance, indicating the cell size, to the nearest 0.01 unit based on duplicate determinations.

9. Precision and Bias

9.1 *Precision*—Duplicate determinations obtained on the same colorimeter that agree within ±0.02 units are acceptable for averaging. Results are comparable only when the same type

[1] This test method is under the jurisdiction of ASTM Committee D21 on Polishes, and is the direct responsibility of Subcommittee D21.03 on Chemical and Physical Testing.

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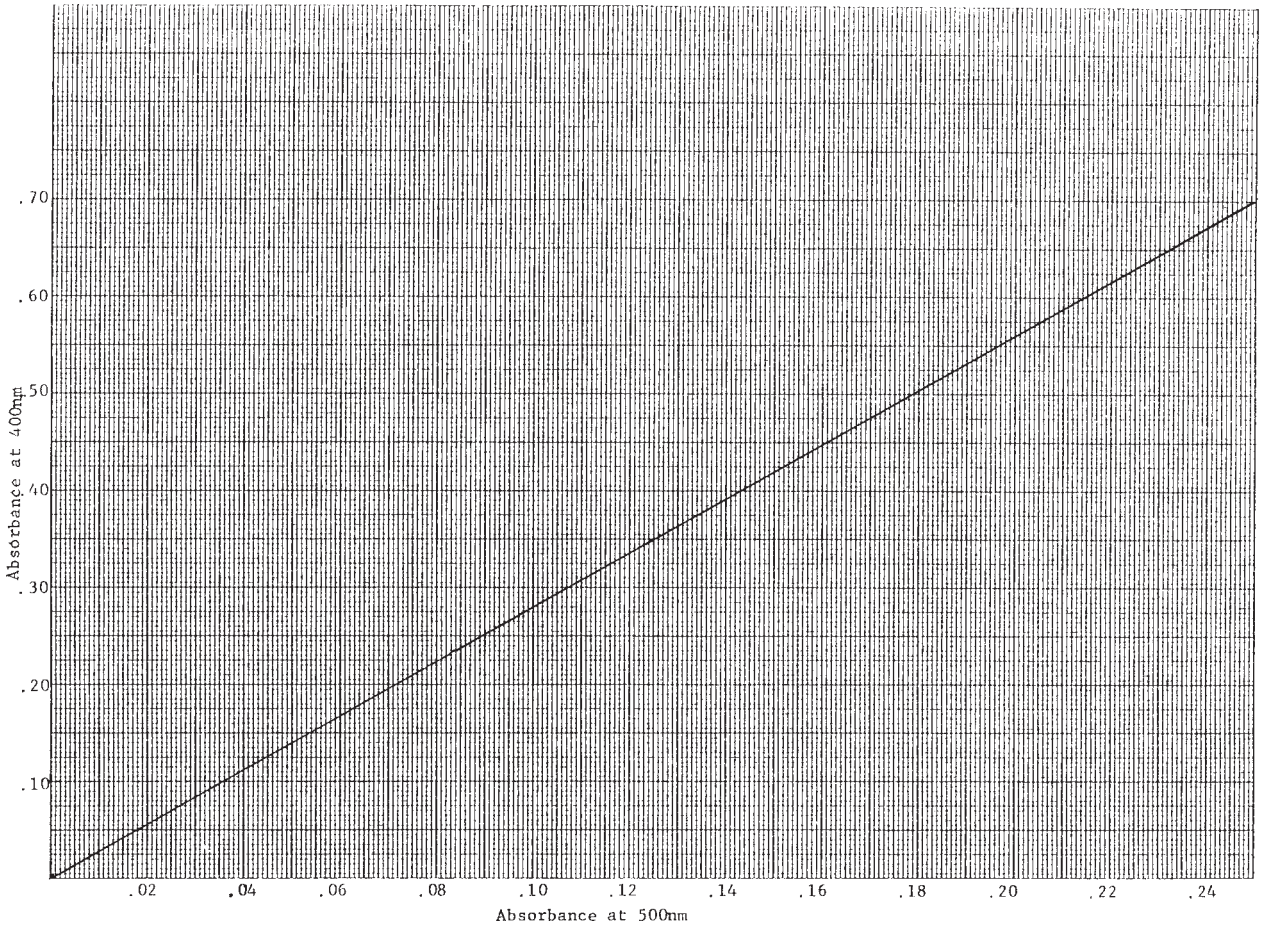
[2] Spectronic 70 has been found satisfactory and is available from Milton-Roy, 820 Linden Ave., Rochester, NY.



NOTE 1—Three polymers gave identical results.

FIG. 1 Correction Graph

colorimeter and the same size cells are used.

9.2 *Bias*—This test method has no bias because the results developed are defined only in terms of this test method.

10. Keywords

10.1 floor polishes; polishes