



Designation: D 2410 - 82

AMERICAN SOCIETY FOR TESTING AND MATERIALS

1916 Race St., Philadelphia, Pa. 19103

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## Standard Test Method for FINISH CONTENT OF WOVEN GLASS FABRIC, CLEANED AND AFTER-FINISHED WITH CHROME COMPLEXES, FOR PLASTIC LAMINATES<sup>1</sup>

This standard is issued under the fixed designation D 2410; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This method covers the measurement of the amount of chrome-complex finish applied to various styles of woven glass fabric that have been suitably cleaned to remove the oils and binders present on the yarn to make them suitable for use in polyester laminates.

1.2 Glass fabrics with this finish can be used with polyester, epoxy, and phenolic resin systems to produce laminates with a wide variety of properties for general use and for use under conditions of high physical stress and moist environment.

NOTE 1—This method is based on the use of a Fisher AC Electrophotometer or equivalent.

### 2. Applicable Document

#### 2.1 ASTM Standard:

D 4029 Specification for Finished Woven Glass Fabrics<sup>2</sup>

### 3. Summary of Method

3.1 Specimens are boiled in sodium hydroxide solution. The chromium content of the material is measured, which is a reliable indication of the amount of chrome-complex finish on the glass fabric.

### 4. Significance and Use

4.1 The purpose of this method is to provide a means for determining the amount of chrome-complex finish on glass fabrics that have met the requirements of Specification D 4029 and whether it has been correctly applied. It is intended for use in specifications, product evaluation, and quality control.

4.2 The chrome-complex finish enhances the handleability of the fabric and improves the mechanical properties of the glass fabric when used as a reinforcement in epoxy or phenolic laminates.

### 5. Apparatus

#### 5.1 Electrophotometer.

### 6. Reagents and Materials

6.1 *Sodium Hydroxide Solution* (100 g/L)—Weigh out 100 g of sodium hydroxide (NaOH, chemically pure), dissolve in distilled water, and dilute to 1 L.

6.2 *Potassium Dichromate, Standard Solutions*—Place several grams of potassium dichromate ( $K_2Cr_2O_7$ ) in a weighing bottle. Heat the weighing bottle (lid off) for 1 h at 212 to 220°F. Replace the cover on the weighing bottle and allow to cool in a desiccator for 30 min. Weigh accurately 0.8484 g into a 50-mL beaker and dissolve in distilled water. Transfer quantitatively to a 1000-mL volumetric flask, dilute to the mark, and mix well. This solution will contain 0.0003 g chromium/mL. Use this final solution for calibration.

### 7. Calibration

7.1 By buret add 5 mL of standard  $K_2Cr_2O_7$  solution to a 100-mL volumetric flask. Then

<sup>1</sup> This method is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D 20.18 on Reinforced Thermosetting Plastics.

Current edition approved July 30, 1982. Published October 1982. Originally published as D 2410 - 65 T. Last previous edition D 2410 - 81.

<sup>2</sup> *Annual Book of ASTM Standards*, Part 33.