Designation: D4906 – 95 (Reapproved 2017)

Standard Test Method for Total Solids and Ash Content in Leather Finishing Materials[1]

This standard is issued under the fixed designation D4906; 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 the total solids and ash content of finishing materials.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.3 *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.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Significance and Use

2.1 This test method is intended for use in determining the total solids content and the ash content of a finishing material before its use on any leather.

3. Apparatus

3.1 *Two Tared Platinum Dishes.*

3.2 *Drying Oven,* that operates at 43°C ± 3°C and 93°C ± 3°C.

3.3 *Desiccator,* with calcium chloride or other desiccant.

3.4 *Muffle Furnace,* capable of maintaining temperatures of (600°C ± 25°C).

4. Sampling

4.1 One 5-g and one 10-g sample of the finishing material shall be weighed with accuracy to within 0.001 g.

5. Procedure

5.1 *Total Solids:*

5.1.1 Place the samples, which have been weighed in platinum dishes, in the oven for 16 h at 43°C followed by 2 h at 93°C. (If two ovens at different temperatures are not available, increase the temperature in the first oven for the 2-h heating.)

5.1.2 Remove the dishes from the oven, place them in a desiccator for 1 h to cool to room temperature and weigh. Return the dishes to the oven for 1 h at 93°C and, after cooling in a desiccator for 1 h, weigh again.

5.1.3 If the weight loss in the 1-h drying period did not change the total solids percentage more than 0.1 %, report the results. If greater than 0.1 % loss was obtained from the last 1-h drying period, then repeat the drying until the change is less than 0.1 %.

5.2 *Ash:*

5.2.1 Place each platinum dish, containing the residue from the total solids determination, in a muffle furnace at 600°C ± 25°C for 2 h.

5.2.2 If difficulty is encountered in completely burning off the carbon, leach the residue with hot water (filtering through ashless filter paper) and further ignite this residue in the muffle furnace.

5.2.3 To the dish containing the cooled ash, add the filtrate; evaporate to dryness and heat for 30 min at 600°C ± 25°C. The product shall then be cooled in a dessicator and weighed.

6. Calculation

6.1 The percent total solids of the finishing material shall be calculated as follows:

$$\text{Total solids, percent} = \frac{A}{B} \times 100 \quad (1)$$

where:

A = final weight of solid matter after drying, and
B = the original weight of the sample.

6.2 The percent ash content of the finishing material shall be calculated as follows:

$$\text{Ash content, percent} = \frac{C}{B} \times 100 \quad (2)$$

[1] This test method is under the jurisdiction of ASTM Committee D31 on Leather and is the direct responsibility of Subcommittee D31.06 on Chemical Analysis and has been produced in cooperation with the American Leather Chemists Association. (Method K 1-1956).

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where:

C = final weight of ash, and
B = the original weight of the sample.

7. Report

7.1 The total solids in the finishing material is the average of the duplicate results and shall be reported in percent.

7.2 The ash content of the finishing material, likewise, is the average of the duplicate results and shall also be reported in percent.

8. Precision and Bias

8.1 No justifiable statement can be made on the precision and bias of this test method because the original interlaboratory test data is no longer available.

8.2 However, the user is cautioned to verify by the use of reference materials, if available, that the precision and bias of this test method is adequate for the contemplated use.

9. Keywords

9.1 ash; finishes; finishing materials; total solids