



Designation: D6402 – 99 (Reapproved 2014)

# Standard Test Method for Determining Soluble Solids and Insolubles in Extracts of Vegetable Tanning Materials<sup>1</sup>

This standard is issued under the fixed designation D6402; 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 test method is intended for use in determining the quantity of soluble solids and insolubles in solutions of tannin extracts, water extracts of vegetable tanning materials, or tanning liquors. This test method is applicable to the analysis of liquid, solid, pasty, and powdered tannin extracts and to the water extracts of raw or spent 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.*

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

D4901 Practice for Preparation of Solution of Liquid Vegetable Tannin Extracts

D4902 Test Method for Evaporation and Drying of Analytical Solutions

D4903 Test Method for Total Solids and Water in Vegetable Tanning Material Extracts

D4905 Practice for Preparation of Solution of Solid, Pasty and Powdered Vegetable Tannin Extracts

D6403 Test Method for Determining Moisture in Raw and Spent Materials

D6405 Practice for Extraction of Tannins from Raw and Spent Materials

### 2.2 ALCA Methods:

A21 Soluble Solids and Insolubles<sup>3</sup>

## 3. Terminology

### 3.1 Definitions:

3.1.1 *insolubles*—non-volatile materials present in tannin extracts and raw or spent materials that are dissolved or suspended in water and do not pass through a filtering process described in this method.

3.1.2 *soluble solids*—non-volatile materials present in tannin extracts and raw or spent materials that are dissolved or suspended in water and pass through a filtering process described in this method.

## 4. Summary of Test Method

4.1 An aliquot of the analytical solution prepared from tannin extracts (Practices D4901 or D4905) or the water extract from raw or spent materials (Practice D6405) is dried overnight in a forced-air oven (Test Method D4902) and the quantity of solid residue remaining is determined and used to calculate the total solids for that sample (Test Method D4903). Another aliquot of the same solution is passed through a specified filtering procedure and the quantity of solid residue remaining in the filtrate is determined and used to calculate the soluble solids for that sample. The difference between the total solids and the soluble solids is defined as the insolubles for that sample.

## 5. Significance and Use

5.1 This test method is used to determine the proportion of the total solids which are soluble solids and that proportion which are insoluble solids in a solution of tannin extract or in the water extract from raw or spent materials prepared for tannin analysis.

5.2 The specimens are aliquots from the analytical solutions prepared from tannin extracts or the water extract solutions prepared from raw or spent materials.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D31 on Leather and is the direct responsibility of Subcommittee D31.01 on Vegetable Leather. This test method has been adapted from and is a replacement for Method A21 of the Official Methods of the American Leather Chemists Association.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> Official Methods of the American Leather Chemists Association. Available from the American Leather Chemists Association, University of Cincinnati, P.O. Box 210014, Cincinnati, OH 45221-0014.