



Designation: D4900 – 99 (Reapproved 2020)

## Standard Test Method for Lignosulfonates (Sulfite Cellulose) in Tanning Extracts<sup>1</sup>

This standard is issued under the fixed designation D4900; 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 detecting the presence of lignosulfonates (sulfite cellulose) in extracts of tanning 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, health, and environmental 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. Referenced Documents

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

D4901 Practice for Preparation of Solution of Liquid Vegetable Tannin Extracts

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

D6404 Practice for Sampling Vegetable Materials Containing Tannin

D6405 Practice for Extraction of Tannins from Raw and Spent Materials

#### 2.2 ALCA Methods:

A50 Lignosulfonates (Sulfite Cellulose)<sup>3</sup>

### 3. Summary of Test Method

3.1 The reaction with aniline of a tanning material extract specimen is compared with that of a solution containing lignosulfonate and tanning material known to be free from lignosulfonate.

### 4. Significance and Use

4.1 This test method is useful to detect possible adulteration of tanning material extract with cheap and inferior lignosulfonates.

### 5. Specimen

5.1 The sample shall be drawn as described in Practice D6404.

5.2 The specimen shall consist of 5 mL of a solution of analytical strength (4.0 g tannin per L), prepared as described in Practices D4901, D4905, and Practice D6405.

### 6. Apparatus and Reagents

6.1 Aniline.

6.2 Hydrochloric Acid, concentrated.

6.3 *Comparison Solution*—This shall contain lignosulfonate (sulfite cellulose) in the proportion of 1 g total solids to 2000 mL of solution, and as much tanning material, similar to and of the same type as that being tested but known to be free from lignosulfonate, as will make up the solution to analytical strength.

### 7. Procedure

7.1 Place the specimen in a test tube. Add 0.5 mL of aniline, and shake well. Add 2 mL of concentrated hydrochloric acid, and again shake mixture well.

### 8. Results

8.1 If at least as much precipitate remains at the end of 15 min as is obtained when the comparison solution is similarly

<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 A50 of the Official Methods of the American Leather Chemists Association.

Current edition approved Dec. 1, 2020. Published December 2020. Originally approved in 1989. Last previous edition approved in 2016 as D4900 – 99 (2016). DOI: 10.1520/D4900-99R20.

<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.



treated, the material shall be held to contain lignosulfonates (sulfite cellulose) and the fact shall be noted on the analysis report.

8.2 Attention is drawn to the fact that some synthetic tannins give precipitates under the conditions of this test method.

## **9. Precision and Bias**

9.1 This test method is adopted from the procedures of the American Leather Chemists Association,<sup>3</sup> where it has long

been in use and where it was approved for publication before the inclusion of precision and bias statements was mandated. The original interlaboratory test data are no longer available. 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.

## **10. Keywords**

10.1 lignosulfonates; sulfite cellulose; tannin analysis; vegetable tannin analysis

*ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.*

*This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or [service@astm.org](mailto:service@astm.org) (e-mail); or through the ASTM website ([www.astm.org](http://www.astm.org)). Permission rights to photocopy the standard may also be secured from the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, Tel: (978) 646-2600; <http://www.copyright.com/>*