Designation: D4905 – 99 (Reapproved2009)

Standard Practice for Preparation of Solution of Solid, Pasty and Powdered Vegetable Tannin Extracts[1]

This standard is issued under the fixed designation D4905; 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 practice covers a standard procedure for use in preparing the analytical solution required for the analysis of solid, pasty, or powdered vegetable tannin extracts.

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:*[2]

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

D4904 Practice for Cooling of Analytical Solutions

D6403 Test Method for Determining Moisture in Raw and Spent Materials

D6404 Practice for Sampling Vegetable Materials Containing Tannin

2.2 *ALCA Method:*

A11 Preparation of Solution of Solid, Pasty, and Powdered Extracts[3]

3. Summary of Practice

3.1 This practice describes a procedure to follow in the preparation of analytical strength solutions from samples of solid, pasty, and powdered vegetable tannin extracts.

4. Significance and Use

4.1 The concentration of tannins in solid, pasty, and powdered extracts needs to be reduced to analytical strength for tannin analyses.

4.2 Vegetable tannin extracts are heterogeneous mixtures of components with varying solubility.

4.3 The solubility of such extracts is influenced by temperature and concentration, which affect the degree of dispersion and size of the component particles.

4.4 Since extracts have greater solubility in hot water than cold, it is desirable to dissolve and disperse an extract in hot water and then let the solution cool slowly to standard room temperature.

4.5 It is often difficult to reduce samples of solid and particularly pasty extracts to specimen size and at the same time ensure representative sampling. Therefore, caution is advised in drawing conclusions on the precision and bias of the results obtained on such extracts; where difficulties in sample preparation are experienced, little confidence can be placed in the results.

5. Specimen

5.1 The specimen shall consist of a portion of the extract sample, prepared as described in Practice D6404 , sufficient to give a solution containing as nearly as possible 4 g of tannin per L (not less than 3.75 g, nor more than 4.25 g, per L).

6. Apparatus and Reagents

6.1 *Formaldehyde*—40 % solution.

6.2 *Toluene*—Assay ≥ 99.5 %.

6.3 *Small Mortar and Pestle.*

6.4 *1-L Volumetric Flask,* M.C.A. type, mixing bulb style.

7. Procedure

7.1 Empty the sample onto a sheet of clean, glazed paper (or suitable clean, smooth foil material), roughly crush any large lumps, and quickly mix and quarter the whole. From each quarter, take a small representative portion, quickly crush, transfer to a small, glass stoppered weighing bottle, and take to the balance. Without delay, transfer the analytical specimen to

[1] This practice is under the jurisdiction of ASTM Committee D31 on Leather and is the direct responsibility of Subcommittee D31.01 on Vegetable Leather. This practice has been adapted from and is a replacement for Method A11 of the Official Methods of the American Leather Chemists Association.

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

[3] 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.