



Designation: D 6408 – 99

Standard Test Method for Analysis of Tannery Liquors¹

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1. Scope

1.1 This test method covers the analysis of tannery liquors made up from vegetable tanning materials.

1.2 The values stated in SI units are to be regarded as the 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:

D 4903 Test Method for Total Solids and Water in Vegetable Tanning Material Extracts²

D 4904 Practice for Cooling of Analytical Solutions²

D 6401 Test Method for Determining Non-Tannins and Tannin in Extracts of Vegetable Tanning Materials²

D 6402 Test Method for Determining Soluble Solids and Insolubles in Extracts of Vegetable Tanning Materials²

D 6404 Practice for Sampling of Vegetable Materials Containing Tannin²

D 6410 Test Method for Determining Acidity of Vegetable Tanning Liquors²

2.2 ALCA Methods:

A25 Analysis of Tannery Liquors³

3. Terminology

3.1 Definitions:

3.1.1 *tannery liquor*—water solutions containing vegetable tannin that are made up and used in a vegetable tannery.

3.1.2 *tannin*—an astringent substance found in the various parts of plants such as bark, wood, leaves, nuts, fruits, roots, etc. Also, quantitatively, tannins are operationally defined as the non-volatile materials present in tannin extracts and raw or

spent materials that are dissolved or suspended in water, are part of the soluble solids determined by Test Method D 6402, and do react with or bind to hide powder when mixed as in this test method.

3.1.3 *vegetable tannins*—mixtures of substances (natural products) obtained from plant tissues by water extraction which have the chemical and physical properties necessary to convert animal hides and skins into leather.

4. Summary of Test Method

4.1 An analytical solution is prepared from the sample of tannery liquor (Practice D 6404). Specimen aliquots from this analytical solution are then analyzed for total solids (Test Method D 4903), soluble solids and insolubles (Test Method D 6402), non-tannins and tannin (Test Method D 6401), and total acidity (Test Method D 6410).

5. Significance and Use

5.1 This test method is used to determine the chemical properties of tannery liquors which are relevant for the vegetable tanning process and influence the astringency of vegetable tanning liquors. The astringency of liquors is dependent upon the solids and tannin content and the acidity. This method provides a standard procedure for determining these properties for any sample of vegetable tanning liquor.

5.2 The specimens are aliquots from the analytical solution prepared from the sample of tannery liquor collected for this purpose.

5.3 The total solids, soluble solids, and non-tannins content are determined and then the tannin content of the liquor sample is calculated. Because the amount of tannin per liter of analytical solution is less than that required for Test Method D 6401, a table specifying the quantity of prepared hide powder to be used for solutions with lower tannin concentrations is included in this test method.

5.4 The total acidity of the liquor sample is determined by one of two titrametric procedures described in Test Method D 6410.

5.5 The results of this test method are dependent on a great many variables but particularly upon: the temperature conditions under which the solutions were prepared and stored and the temperature at which the current analysis is performed; the uniformity and consistency of the Kaolin paste layer deposited onto the filter paper; the rate of solution run-out from the

¹ This test method is under the jurisdiction of ASTM Committee D-31 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 A25 of the Official Methods of the American Leather Chemists Association.

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² *Annual Book of ASTM Standards*, Vol 15.04.

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.