Designation: D4904 – 99 (Reapproved 2016)

Standard Practice for Cooling of Analytical Solutions[1]

This standard is issued under the fixed designation D4904; 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 the cooling of analytical solutions such as those prepared in Practices D4901, D4905, or D6405. The tannin analysis results for an analytical solution are to some extent dependent on the conditions of the cooling of that solution.

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]

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

D6405 Practice for Extraction of Tannins from Raw and Spent Materials

2.2 *ALCA Methods:*

A12 Cooling of Analytical Solutions[3]

3. Summary of Practice

3.1 This practice specifies a procedure to follow in cooling to standard or room temperature the hot analytical solutions prepared from tanning materials for Practices D4901, D4905, or D6405.

4. Significance and Use

4.1 The solubility of extracts is influenced by temperature. The analytical solutions prepared from tanning extracts are dissolved or diluted in hot water. It is necessary to exercise caution in cooling these solutions, and to do so in such a way as to avoid chilling, under-cooling, or uneven cooling of the solutions.

5. Specimen

5.1 The specimen shall be the 1-L or 2-L solutions prepared under Practices D4901, D4905, or D6405.

6. Procedure

6.1 The prepared solutions shall be protected from drafts, and shall be allowed to stand overnight in an ambient temperature of not less than 23°C, nor more than 28°C. After their temperature has been adjusted, the solutions shall be made up to the mark with distilled water at 23°C. Where a constant temperature room is available, the solutions, suitably protected from drafts, may be cooled therein with advantage. In this case, the room shall be so controlled that solutions in flasks, exposed therein, shall remain at 24°C.

7. Keywords

7.1 analytical solutions; cooling; tannin analysis; vegetable tannin analysis

[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 A12 of the Official Methods of the American Leather Chemists Association.

Current edition approved Sept. 1, 2016. Published October 2016. Originally approved in 1989. Last previous edition approved in 2009 as D4904 – 99 (2009). DOI: 10.1520/D4904-99R16.

[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.