



Designation: ~~D4655 – 95 (Reapproved 2012)~~ **D4655 – 95 (Reapproved 2017)**

Standard Test Methods for Sulfates in Leather (Total, Neutral, and Combined Acid)¹

This standard is issued under the fixed designation D4655; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 These test methods are intended for use in determining the total, neutral, and combined acid sulfate in mineral-tanned leather.

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.*

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:*²

D2813 Practice for Sampling Leather for Physical and Chemical Tests

D4654 Test Method for Sulfate Basicity in Leather

3. Significance and Use

3.1 These test methods are used to determine the basicity of leather when used in accordance with Test Method **D4654**.

4. Apparatus

4.1 *Volumetric Flask*, 250 mL.

4.2 *Filter paper*, ashless, fine grained and porcelain crucible.

4.3 *Crucible*, Gooch, with porous porcelain filter (optional).

5. Reagents

5.1 *Ammonium Hydroxide Solution*, (0.1N)—7 mL/L reagent grade concentrate NH_4OH . Optional: Potassium dihydrogen phosphate, 0.1 molar solution (13.6 g/L KH_2PO_4) or sodium dihydrogen phosphate, 0.1 molar solution (13.8 g/L $\text{NaH}_2\text{PO}_4\text{-H}_2\text{O}$).

5.2 *Hydrochloric Acid Solution*, (1.5 N)—125 mL/L reagent grade concentrate hydrochloric acid.

5.3 *Barium Chloride Solution*—($\text{BaCl}_2\cdot 2\text{H}_2\text{O}$), 1 %.

5.4 *Sodium Hydroxide Solution*, 0.01 N, 0.4 g/L.

5.5 *Mixed Indicator*, consisting of 60 mL of a 0.1 % solution of methyl red and 40 mL of a 0.1 % solution of methylene blue, both in 95 % alcohol.

¹ These test methods are under the jurisdiction of ASTM Committee **D31** on Leather and are the direct responsibility of Subcommittee **D31.06** on Chemical Analysis. This test method was developed in cooperation with the American Leather Chemists Assn. (Method D20–1956).

Current edition approved April 1, 2012 April 1, 2017. Published April 2012 April 2017. Originally approved in 2006 2012 as D4655–95 (2006) (2012). DOI: 10.1520/D4655-95R12.10.1520/D4655-95R17.

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.