



# Standard Test Method for Nitrocellulose in Finish on Leather<sup>1</sup>

This standard is issued under the fixed designation D4907; 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 identifying nitrocellulose in the finish on all types of leathers. This test method does not apply to wet blue.

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. Significance and Use

2.1 This test method is used to identify nitrocellulose in finishes on all types of leathers.

## 3. Apparatus

3.1 *Borosilicate Glass Watch Glass*, 100 mm diameter.

3.2 *Reagent Bottles*, two, (4 fl oz each) equipped with glass joint dropping pipet.

## 4. Reagents

4.1 Indicator solution prepared by dissolving 0.1 g diphenylamine in solution containing 100 mL of sulfuric acid and 30 mL of distilled water.

4.2 Blank solution comprising 100 mL of sulfuric acid and 30 mL of distilled water.

4.3 Acetone, C.P.

4.4 *Hazards Statement*—All reagents and chemicals should be handled with care. Before using any chemical, read and follow all safety precautions and instructions on the manufacturer's label or MSDS (Material Safety Data Sheet).

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D31 on Leather and is the direct responsibility of Subcommittee D31.06 on Chemical Analysis. This test method was developed in cooperation with the American Leather Chemists Assn. (Method K 5-1956).

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## 5. Test Specimen

5.1 The test specimen shall be approximately 1 cm<sup>2</sup> of the finished leather.

## 6. Procedure

6.1 Place the test specimen in the watch glass with the finish side up. Apply one or 2 mL of indicator solution on the finish and allow to run over the side of the leather on to the watch glass. After 3 min, if the indicator solution does not develop a dark blue color, then nitrocellulose is not present in the finish. If the indicator solution develops a dark blue color after contact with the finish, it indicates the presence of nitrocellulose or has developed color from colored finish components, or both.

6.2 Repeat the above procedure except that the blank solution is employed instead of the indicator solution. If a dark blue color does not develop, whereas it does when the indicator solution is applied, then nitrocellulose is present in the finish and colored finishing materials do not interfere.

6.3 If colored finish material develops a dark blue color in the presence of the blank solution, then place the specimen finish side up in a watch glass and pour acetone on the specimen, until completely covered, for dissolving any nitrocellulose present in the specimen. After allowing the specimen to soak in acetone for approximately 2 min, remove the specimen from the watch glass and the evaporate acetone in the watch glass on the steam oven to dryness. When cooled to room temperature, place a few drops of indicator solution on one side of the watch glass near the rim and allow the drops to run downward. At another location on the watch glass, place a few drops of blank solution near the rim and allow to run downward. If nitrocellulose is present in the finish, a dark blue color will develop as the indicator solution runs downward into the watch glass whereas the blank solution will not show any color development.

## 7. Report

7.1 The indicator method for testing the presence of nitrocellulose in finish on the leather shall be reported as positive or negative.

## 8. Precision and Bias

8.1 This test method is adopted from the procedures of the American Leather Chemists Association where it has been in

use and where it was approved for publication before the inclusion of precision and bias statements were mandated. The original interlaboratory test data is no longer available. The user is cautioned to verify by the use of reference materials, if available, that the precision and bias of this method is adequate for the contemplated use.

## **9. Keywords**

9.1 finish; leather; nitrocellulose

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