Designation: D 4576 – 86 (Reapproved 1996)

Standard Test Method for Mold Growth Resistance of Blue Stock (Leather)[1]

This standard is issued under the fixed designation D 4576; 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 test method covers the determination of mold resistance of blue stock subject to storage and shipping requirements and intended for use in leather manufacturing. This test method may not be suitable to evaluate fungicides that are inactivated by proteins. This includes alkyldimethylbenzyl ammonium chlorides.

1.2 Conclusions about mold resistance are drawn from the results by comparing the test with a simultaneously run control of known resistance. Success or failure is determined by the amount of mold growth relative to the control.

1.3 To allow use of this test method by any laboratory, flexibility has been permitted in times, temperature, and humidity of incubation, inoculum, hide sampling area, and choice of control. These may be adjusted to fit local conditions but must be standardized.

1.4 *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. Terminology

2.1 *Definition of Term Specific to This Standard:*

2.1.1 *blue stock*—hide or skin, or split of a hide or skin, tanned with basic chromium sulfate, containing approximately 50 % moisture and having an acid pH.

3. Summary of Test Method

3.1 Blue stock test specimens are surrounded by but not covered with agar, inoculated, and incubated.

3.2 After various incubation periods, mold growth is rated as a percentage of the blue stock covered.

3.3 Resistance to mold growth of the subject blue stock is determined by comparison with blue stock of known resistance characteristics (the control), that is tested simultaneously.

4. Significance and Use

4.1 This test method provides a technique for evaluating mold growth resistance characteristics of blue stock and should assist in the prediction of storage time before molding occurs.

4.2 The degree of correlation between this test and blue stock in commercial quantities in storage or shipment situations, or both, has not been fully determined.

5. Interferences

5.1 A common interference is contamination of plates, agar, or samples by unwanted organisms that settle in from the environment.

5.2 *Volatility and Leachability of Biocides*—A "zone of inhibition" where no mold grows on the agar adjacent to the specimen indicates that the fungicide may leach.

6. Apparatus

6.1 *Petri Dishes*—120 mm diameter. Sterile plastic disposable dishes are preferred.

6.2 *Incubator*, or other location, free of drafts, and capable of a constant (± 2°C) temperature within the 26 to 30°C range,

6.3 *Medicine droppers*, disposable plastic type delivering 30 to 35 drops per mL.

7. Reagents and Materials

7.1 *Potato Dextrose Agar*, [2] a dehydrated plating medium used in culturing yeasts and molds from dairy products.

7.2 *Inoculum*, [3] Aspergillus niger 1×10^6 spores per mL, or other organism or a combination of organisms known to be indigenous to the storage area or the blue stock.

8. Sampling, Test Specimen, and Test Units

8.1 Take test specimens from equivalent hide locations (for example, butt area) for both test and control.

8.2 If unable to test immediately, hold test specimens in separate plastic bags and keep cool.

8.3 Cut test specimens one in. square.

8.4 Use three test specimens for each test unit or blue stock surface to be evaluated.

9. Procedure

9.1 *Agar Preparation*:

9.1.1 *Agar Requirements*—A split blue stock sample requires about 25 mL solution and unsplit blue stock requires

[1] This test method is under the jurisdiction of ASTM Committee D31 on Leather and is the direct responsibility of Subcommittee D31.02 on Blue Stock.

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[2] A product that meets the requirements of this method is Potato Dextrose Agar stock no. 0013-01-4, available from Difco Labs, P.O. Box 1058A, Detroit, MI 28232.

[3] An inoculum that meets the requirements of this method is available from Chemtan Company, Inc., Box C, Exeter, NH 03833-0050, prepared by Abbott Laboratories.