Designation: D3924 – 16 (Reapproved 2019)

Standard Specification for Standard Environment for Conditioning and Testing Paint, Varnish, Lacquer, and Related Materials[1]

This standard is issued under the fixed designation D3924; 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 This specification defines the standard atmospheres for normal conditioning and testing of paint, varnish, lacquer, and related materials, at approximately ambient conditions.

NOTE 1—See Terminology E41, Specification E171 and Test Method E337.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *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]

E41 Terminology Relating to Conditioning (Withdrawn 2019)[3]

E171 Practice for Conditioning and Testing Flexible Barrier Packaging

E337 Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures)

3. Standard Atmosphere

3.1 Unless otherwise specified, conditioning and testing of coating materials known to be sensitive to variations in temperature or relative humidity shall be carried out in an atmosphere having a temperature of 23 ± 2°C (73.5 ± 3.5°F) and a relative humidity of 50 ± 10 %. If closer tolerances are required, ±1°C (±2°F) or even narrower limits, and ±5 % relative humidity may be specified.

NOTE 2—The positive and negative deviations from the specified set points are maximum allowed operational fluctuations during equilibrium conditions. If the operational fluctuations are beyond the stated tolerances, discontinue the conditioning or testing and correct the cause of the tolerance exceedance before continuing.

3.2 The standard room or cabinet shall be well-ventilated but free of drafts, dust, products of combustion, and laboratory fumes. Lighting conditions, unless otherwise specified, shall be that normally maintained in a room used for paint test purposes.

4. Standard Temperature

4.1 Unless otherwise specified, the standard test temperature shall be as specified in Section 3.

5. Room Temperature

5.1 A temperature in the range from 18 to 29.5°C (65 to 85°F) shall be called room temperature.

6. Conditioning and Testing

6.1 Unless otherwise specified in the test method, condition the organic coating materials or dried test films thereof and the test equipment for not less than 3 h in the appropriate atmosphere and verify the temperature of the material before conducting the test in the same atmosphere.

6.2 For routine testing where close temperature control is not critical, conduct all physical tests on organic coating materials or dried test films thereof at the room temperature of 18 to 29.5°C (65 to 85°F).

6.3 For referee testing, unless otherwise specified in the test method, conduct all physical tests on organic coating materials or dried test films thereof in the standard atmosphere as specified in Section 3.

7. Keywords

7.1 conditioning environment

[1] This specification is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.20 on Quality Assurance and Statistics.

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[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] The last approved version of this historical standard is referenced on www.astm.org.