Designation: D1748 – 10 (Reapproved 2015)

Standard Test Method for Rust Protection by Metal Preservatives in the Humidity Cabinet[1]

This standard is issued under the fixed designation D1748; 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 test method covers the evaluation of the rust-preventive properties of metal preservatives under conditions of high humidity.

1.2 The values stated in SI units are to be regarded as the standard except where the test apparatus or consumable parts are only available in other units. In such cases these will be regarded as standard. The values given in parentheses are for information only.

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 consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

A109/A109M Specification for Steel, Strip, Carbon (0.25 Maximum Percent), Cold-Rolled

D512 Test Methods for Chloride Ion In Water

D516 Test Method for Sulfate Ion in Water

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

E323 Specification for Perforated-Plate Sieves for Testing Purposes

2.2 *Federal Standards:*[3]

QQ-S-698 Steel Sheet and Strip, Low Carbon

2.3 *Military Standards:*[4]

MIL-C-5646F Cloth, Airplane

MIL-C-15074E Corrosive Preventive Compound Finger Print Remover

2.4 *Society of Automotive Engineers:*[5]

SAE 1009C Tee Reducer, Bulkhead on Side, Flareless Tube

3. Summary of Test Method

3.1 Steel panels are prepared to a prescribed surface finish, dipped in the test oil, allowed to drain, and then suspended in a humidity cabinet at 48.9 °C (120 °F) for a specified number of hours. The oil fails or passes the test in accordance with the size and number of rust dots on the test surfaces of the panels.

4. Significance and Use

4.1 This test method is used for measuring the relative abilities of metal preservatives to prevent the rusting of steel panels under conditions of high humidity. It should not be relied upon to predict the effectiveness of a metal preservative in which high humidity is not the principal factor in the rusting.

4.2 Comparisons made by this test method should normally be limited to similar metal preservative combinations designed for similar applications. The test life required for each type of metal preservative and for each intended application should be based on actual experience with that type of preservative in the intended service.

4.3 Since the precision of the test method appears to be less than desired, a number of repeat tests may be necessary to establish the test life of a given metal preservative, and repeat tests by this test method in more than one cabinet are sometimes desirable.

4.4 The data obtained from this accelerated test is of interest only in eliminating the most unsuitable materials or for indicating a probable relative order of protection against rust under conditions of high humidity. This test method does not

[1] This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.L0.03 on Corrosion Testing of Sheet Metal Processing Fluids.

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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] Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, http://www.access.gpo.gov.

[4] Available from Standardization Documents Order Desk, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

[5] Available from SAE International (SAE), 400 Commonwealth Dr., Warrendale, PA 15096, http://www.sae.org.

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