



Designation: D 1748 – 83 (Reapproved 1993)^{€1}

An American National Standard



Designation: 366/84

AMERICAN SOCIETY FOR TESTING AND MATERIALS
100 Barr Harbor Dr., West Conshohocken, PA 19428
Reprinted from the Annual Book of ASTM Standards. Copyright ASTM

Standard Test Method for Rust Protection by Metal Preservatives in the Humidity Cabinet¹

This standard is issued under the fixed designation D 1748; 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 (€) indicates an editorial change since the last revision or reapproval.

This test method has been adopted for use by government agencies to replace Method 5310 of Federal Test Method Standard No 791 b.

€¹ NOTE—Keywords were added in May 1993.

1. Scope

1.1 This test method is used for evaluating 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.

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:

A 109 Specification for Steel, Strip, Carbon, Cold-Rolled²
D 91 Test Method for Precipitation Number of Lubricating Oils³

D 512 Test Methods for Chloride Ion in Water⁴

D 516 Test Methods for Sulfate Ion in Water⁴

2.2 Federal Specifications:⁵

RRS-366 (Method 5329 of VV-L-791e) Test Sieve Sizes

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

PD-680 Standard Solvent

JAN-H-792 Operations of Humidity Cabinet

2.3 Military Specifications:⁵

MIL-C-16173D Corrosion Preventive Compound, Solvent Compound Cutback, Cold Application⁶

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

2.4 *Society of Automotive Engineers:*⁷

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 $48.9 \pm ^\circ\text{C}$ (120°F) for a specified number of hours. The oil fails or passes the test according to 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 There are published data indicating a useful degree of correlation with service performance, though these data are not extensive. Comparisons made by this 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 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 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 method does not prescribe the exposure periods to be used for a specific product, nor the interpretation to be given to the results.

¹ This test method is under the jurisdiction of ASTM Committee D-2 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D 02.L0.03 on Corrosion Testing of Sheet Metal Processing Fluids.

Current edition approved July 29, 1983. Published September 1983. Originally published as D1748 – 60 T. Last previous edition D1748 – 70 (1975).

² *Annual Book of ASTM Standards*, Vol 01.03.

³ *Annual Book of ASTM Standards*, Vol 05.01.

⁴ *Annual Book of ASTM Standards*, Vol 11.01.

⁵ Available from Standardization Documents Order Desk, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

⁶ Available from British Standards Institute, 2 Park St., London, England W1A2B5.

⁷ Available from Society of Automotive Engineers, 400 Commonwealth Dr., Warrendale, PA 15096.