



Designation: D 3310 – 00

Standard Test Method for Determining Corrosivity of Adhesive Materials¹

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1. Scope

1.1 This test method is intended to determine whether an adhesive material, cured or uncured, is corrosive to a metal. It is a general test method intended to screen out those materials that give a visible sign of corrosion.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are provided for information purposes 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 establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 907 Terminology of Adhesives²

G 15 Terminology Relating to Corrosion and Corrosion Testing³

3. Terminology

3.1 *Definitions*—Definitions of terms in this test method may be found in Terminologies D 907 and G 15.

3.1.1 *corrosivity, n*—the tendency to cause corrosion.

4. Summary of Test Method

4.1 The metal of interest is enclosed in a glass container with the adhesive material. The containers are stored in temperature-controlled ovens at various temperatures with and without water present.

4.2 *Controls*, glass jars containing samples (strips) of the same metal with and without water but no adhesive stored in the same oven for comparison.

5. Significance and Use

5.1 This test method is a subjective test in that determinations of degree of corrosivity is based upon a visual inspection for a green discoloration or other evidence of corrosion.

6. Apparatus

6.1 *Glass Jars*, wide-mouth, with screw cap (8-oz size). The cap liner shall be TFE- or FEP-fluorocarbon.

6.2 *Forced Draft Circulating Air Oven*, capable of maintaining $71 \pm 2^\circ\text{C}$ ($160 \pm 4^\circ\text{F}$); $93 \pm 2^\circ\text{C}$ ($200 \pm 4^\circ\text{F}$); $121 \pm 2^\circ\text{C}$ ($250 \pm 4^\circ\text{F}$). Other temperatures can be used with agreement of interested parties.

6.3 *Open Glass Jars or Cups*, 1-oz size.

6.4 *Metal or metals* being checked for corrosion.

7. Procedure

7.1 Place 5 to 10 g of the adhesive in a small glass jar with the metal being evaluated partly embedded in the adhesive. Place this small uncovered jar in a large jar. Screw the cap of the large jar tightly in place. Then place the jar in the oven at a temperature as specified in 6.2.

NOTE 1—Here metal is exposed during cure rather than after cure.

7.2 Same as 7.1, except place a small jar half filled with distilled water in a large jar with the jar containing adhesive and metal. However, do not use water above 71°C .

7.3 Same as 7.1 and 7.2, except cure the adhesive in accordance with manufacturer's instructions before placing it in the large jar.

NOTE 2—Hot-melt or air-dried materials are considered to be in the cured state.

8. Control

8.1 Place a metal specimen similar to the specimen being evaluated in a screw cap jar with no adhesive. Tighten the screw cap in place, and place the jar in the same oven at the same time as the specimen being evaluated. Store another large jar with a control metal specimen and including a small jar with water in it in the oven in a similar manner.

9. Cleanliness

9.1 Clean the jars and covers so that no foreign matter is present.

9.2 Abrade the metal strips that are exposed with 600-grit mesh emery paper to achieve a shiny surface.

9.3 Expose the metals with corrosion preventive treatments as treated.

¹ This test method is under the jurisdiction of ASTM Committee D-14 on Adhesives and is the direct responsibility of D14.80 on Metal Bonded Adhesives.

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² *Annual Book of ASTM Standards*, Vol 15.06.

³ *Annual Book of ASTM Standards*, Vol 03.02.