Designation: F1598 – 95 (Reapproved 2014)

Standard Test Method for Determining the Effects of Chemical/Solvent Exposure to a Membrane Switch/Graphic Overlay (Spot Test Method)[1]

This standard is issued under the fixed designation F1598; 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 testing of any surface that may be exposed to liquid chemical(s).

1.2 This test method is not designed for immersion testing conditions or material edge attack.

1.3 This test method is designed for evaluation of visual changes. In certain instances physical (non-visual) changes may occur and functional testing may be appropriate.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 *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:*[2]

F1595 Practice for Viewing Conditions for Visual Inspection of Membrane Switches

3. Significance and Use

3.1 The specific chemical(s) selected is at the discretion of the customer and vendor.

3.2 Variations in results may be expected due to different rates of chemical evaporation. The use of a watchglass with sealed edges is intended to curtail or eliminate evaporation of the chemical.

4. Apparatus

4.1 *Watchglass,* 1.5 in. (38 mm).

4.2 *Medical gauze pad,* 0.75 in.^{2} (19 mm^2), ±0.125 in. (3 mm).

5. Conditioning

5.1 Condition all specimens and chemical(s)/solvent(s) for 72 h at 68 to 77°F (20 to 25°C) and 20 to 80 % relative humidity (RH).

5.2 The test specimen should be clean and dry before testing.

5.3 *Cleaning of the Test Specimen :*

5.3.1 Use a clean lint-free piece of absorbent material and either reagent grades of *n*-heptane or isopropyl alcohol.

5.3.2 Wipe the surface of the test area with a saturated piece of cleaning material.

5.3.3 Dry the test area with fresh absorbent cleaning material.

5.3.4 Repeat these two procedures three times to ensure thorough cleanliness.

5.3.5 Inspect the test area to ensure no visual damage has been caused by the cleaning process.

6. Procedure

6.1 Conduct the test at 68 to 77°F (20 to 25°C) and 20 to 80 % RH.

6.2 Mark the test specimen with a test field that is approximately a size of 2 in.^{2} (51 mm^2). Mount the specimen horizontally.

6.3 Completely saturate a 0.75-in.^{2} (19-mm ^{2}) of gauze with the test chemical. Place the gauze within the test field and cover with a watchglass with the edges sealed if necessary to ensure that the surface remains wet for the duration of the test period. If the test specimen is embossed, perform the test on an embossed area that shall be completely covered with the watchglass.

6.4 A larger watchglass and gauze pad may be required due to the test surface. In this instance the size relationship between the field area watchglass and gauze should remain the same.

[1] This test method is under the jurisdiction of ASTM Committee F01 on Electronics and is the direct responsibility of Subcommittee F01.18 on Membrane Switches.

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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.

6.5 The duration of the test shall be determined by the customer and vendor.

6.6 After the test, wipe off the test area with a clean lint-free material. Repeat the cleaning procedure in 5.2 to remove any surface contamination of the test chemical.

7. Interpretation of Results

7.1 Allow the test specimen(s) to recover for 24 h at 68 to 77°F (20 to 25°C) and 20 to 80 % RH prior to viewing the test area for result purposes.

7.2 View the test area in accordance with Practice F1595 to determine any visual changes.

7.3 Look for discoloration, crazing, cracking, swelling, blistering, pitting, hazing or other appearance changes.

8. Precision and Bias

8.1 The precision and bias of this test method cannot be determined.

9. Keywords

9.1 chemical exposure; graphic overlay; membrane switch