

SEMI G75.4-0698 (Reapproved 0706) TEST METHOD FOR MEASUREMENT OF WATER ABSORPTION OF LEADFRAME TAPE

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1 Summary of Method

1.1 Leadframe tape is exposed to an environment at constant humidity and temperature. The water absorption is measured by directly weighing the samples before and after test.

2 Referenced Standards and Documents

2.1 *ASTM Specification*¹

ASTM D 1193 — Standard Specification for Reagent Water

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

3 Equipment

- 3.1 Direct reading electric balance capable of reading 0.1 mg.
- 3.2 Thermohygrostat capable of $23 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ RH.
- 3.3 Thermohygrostat capable of $85 \pm 2^\circ\text{C}$ and $85 \pm 5\%$ RH.

4 Materials

- 4.1 *Deionized Water* — Refer to ASTM D 1193.

5 Test Conditions

5.1 *Specimen Conditioning*

- 5.1.1 *Temperature* — $23 \pm 2^\circ\text{C}$
- 5.1.2 *Humidity* — $50 \pm 5\%$ RH

5.2 *Test Conditions*

- 5.2.1 *Temperature* — $85 \pm 2^\circ\text{C}$
- 5.2.2 *Humidity* — $85 \pm 5\%$ RH

6 Sampling

- 6.1 The sampling is one sample per one lot. The vendor must report the definition of lot, if customer requires it.
- 6.2 The sample's weight shall be 1 gram minimum.
- 6.3 Use plastic tweezers to handle the samples.

7 Equipment Setup and Calibration

- 7.1 Refer to the thermohygrostat manufacturer's manual for setup and calibration procedures.

8 Procedure

- 8.1 Separate off the protective film from the leadframe tape.
- 8.2 Set the thermohygrostat at 23°C and 50% RH and condition the samples at these conditions for 16 hours minimum.
- 8.3 Weigh each sample to 0.1 mg accuracy (W_1 , Units-grams).
- 8.4 Set the thermohygrostat at 85°C and 85% RH and leave the samples at these conditions for 20 ± 0.25 hours.
- 8.5 Wipe the water from sample surface with lint-free clean wipes.

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8.6 Reweigh each sample (W_2 , Unit-grams).

8.7 Calculation

8.7.1 The water absorption obtained, A (%), is determined from the following equation:

$$A(\%) = \frac{(W_2 - W_1) \times 100}{W_1}$$

9 Related Documents

9.1 ASTM Specification

ASTM D 570 — Standard Test Method for Water Absorption of Plastics

9.2 JIS Specifications²

JIS K 6911 — Testing Methods for Thermosetting Plastics

JIS K 7209 — Testing Methods for Water and Boiling Water Absorption of Plastics

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