The Institute for Interconnecting and Packaging Electronic Circuits
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IPC-TM-650
TEST METHODS MANUAL

Number	
2.3.4.3	
Subject	
Chemical Resistance of Core Materials to Methylene Chloride	
Date	Revision
5/86	
Originating Task Group	
N/A	

1.0 Scope This test method is designed for use in determining the resistance of core (dielectric) materials used in printed wiring boards to methylene chloride at laboratory ambient temperature.

2.0 Applicable documents

IPC-TM-650 Method 2.3.6, Etching, Ammonium Persulfate Method

IPC-TM-650 Method 2.3.7, Etching, Ferric Chloride Method

IPC-TM-650 Method 2.3.7,1, Etching, Cupric Chloride Method

3.0 Test specimens

3.1 Dimensions The test specimens shall be 2.00 in. x 2.00 in. X thickness of material. Tolerance on the 2.00 in. dimensions shall be ± .03 in.

3.2 Edge finish The edges of the specimens shall be milled or sanded smooth with 400 grit sandpaper.

3.3 Number of specimens Three specimens shall be used for this test.

3.4 Removal of metal cladding The metal cladding shall be removed by etching per IPC-TM-2.3.6, 2.3.7, 2.3.7.1 or other suitable method which does not affect the surface of the pressed sample.

4.0 Apparatus

4.1 Oven Circulating air oven capable of maintaining a uniform temperature of 105° to 110°C (221° to 230°F).

4.2 Desiccator

4.3 Analytical balance

5.0 Procedure

5.1 Conditioning The specimens shall be conditioned by drying in an oven for 1 hour at 105° to 110°C (221° to 230°F), then cooled to room temperature in a desiccator.

5.2 Fill a 3000 ml beaker with methylene chloride to a depth of 3 in. and maintain at 23° ± 2°C in a well-ventilated fume hood. Place a rack in the bottom of the beaker to hold the samples upright and apart.

5.3 Exposure Remove each specimen from the desiccator and immediately weigh to the nearest 0.1 milligram, recording the initial weight as ''A''. Immerse each specimen in the methylene chloride for 30 ± 0.5 minutes. Remove from the beaker, air dry for 10 minutes ± 30 seconds, weigh immediately and record the final weight as ''B.'' Drying time includes weighing time.

5.4 Evaluation

5.4.1 Calculation Calculate and record the percent change in weight for each specimen to the nearest 0.01 percent as follows:

$$\text{Change in weight, percent} = \frac{|B - A|}{A} \times 100$$