

PERMEATION OF RUBBER-COATED DIAPHRAGM CLOTH**Application**

This test method describes the procedure for determining the resistance to permeation of molded synthetic elastomer-coated reinforced polyimide diaphragm cloth by gasoline vapors. The sample is exposed to gasoline vapors and the time for permeation is measured.

Apparatus and Materials Required**Permeation Test Fixture**

Test fixture as described in Figures 1 and 2.

Sample Cutting Die or Scissors

Die or scissors to cut circular samples 100 mm in diameter.

Stopwatch or Elapsed Timer**Gasoline**

Caution - Gasoline is extremely flammable. Exercise caution. No smoking or open flame permitted in area while test is being run. Perform test in an area with adequate ventilation. Refer to Fire Control Bulletin No. 18.

Filtered, Dry Compressed Air**Conditioning and Test Conditions**

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

1. Prepare test sample using scissors or sample cutting die. Sample to be 100 +/- 3 mm in diameter and thickness shall be as received.
2. Pour sufficient gasoline into lower section of test fixture to fill fixture approximately 13 mm deep.

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Page 1 of 6

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3. Place sample in recess of lower section of test fixture. Position upper section on sample and position clamps. Tighten clamps firmly to obtain an adequate seal. See Figures 1, 2, and 3.
4. Pour sufficient de-aerated water into upper section of fixture to fill approximately 20 mm deep. Allow assembled test fixture with test sample in place to stand at room temperature for about 15 minutes to allow gasoline vapors to accumulate under test sample.
5. Apply 103 +/- 7 kPa air pressure to lower side of diaphragm through port. Close valve to maintain pressure. Start timer or stopwatch at the time the desired pressure is reached.
6. Observe the test sample under the water. Record the elapsed time until the first bubble breaks free from the diaphragm surface. Report as required in the relevant Engineering Materials Specification.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.