

**ELASTOMERIC MATERIALS
MOUNTING FOR MICROHARDNESS TEST****Application**

This test method describes techniques for mounting small rubber components and materials in preparation for determining microhardness (IRHD) according to ASTM D 1415. It describes sample preparation and mounting procedures to assure minimal movement when a "hold-down" mechanism is not practical during the measurement of irregularly-shaped finished elastomeric parts such as "lip" seals or other components with concave or convex surfaces.

Apparatus Required**Surgical Blades and Handle**

An alternative consists of a hand-held fixture in which parallel single-edge razor blades are mounted at 2 mm distance.

Tweezers

Bench clamp or laboratory vise.

Polishing Surface

Such as a marble or epoxy table top.

Pocket Knife**Materials Required****Emery Paper**

400 - 600 grit.

Steel Discs

Parallel surfaces and fine-ground; 40 mm dia x 5 mm thick.

Cutting Surface

Wood, leather, or dense cardboard (e.g., posterboard).

Tissues

Laboratory grade, lint-free.

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2001 08 23	Revised	Editorial – no technical change A. Cockman
1990 02 23		

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Ethanol

Reagent grade: CAUTION: FLAMMABLE.

Cyanoacrylate Adhesive

Epoxy Adhesive

Room temperature (23 +/- 2 °C) cure (2-part).

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

Specimen Preparation:

1. Using a handle-mounted, sharp surgical blade upon a wood, leather, or dense cardboard cutting surface, cut the elastomeric samples consistent with the minimum dimensions stated in ASTM D 1415.

Assure that the sections are smooth and that the surface in which measurements will be taken is parallel to the surface to be used for bonding.

Bonding Non-Volatile Fluid Aged or Unaged Specimens Using Cyanoacrylates:

1. Wipe the mounting disc with alcohol and tissue to remove all detectable traces of contaminants.
2. Carefully apply a drop of cyanoacrylate adhesive or several separate drops if several specimens are to be mounted on one disc at a time.

Note: Observe the precautions regarding the use of cyanoacrylate. This adhesive rapidly bonds human tissue.

3. Using tweezers, place the specimen on the adhesive drop and gently press with the flat edge of a scalpel or tweezers to assure intimate contact with the steel disc.

Avoid excessive pressure which may cause rubber deformation and bonding in a stressed condition which may affect the hardness measurement.

4. To hasten the adhesive curing, carefully "wick" any excess adhesive with the corner of a tissue while maintaining gentle pressure on the specimen for 1 - 2 minutes.

Ensure that adhesive does not contact the surface to be checked for hardness as it becomes brittle when dry and must be scraped away.