UV PROCESS SUPPLY, INC.

DUROMETER SHORE A INSTRUCTION MANUAL

PART #N006-002

INTRODUCTION

The Shore A Durometer is designed to measure ASTM Type A hardness of rubber, elastomers, and other rubber-like materials including neoprene, silicone, vinyl, and butyl. Soft plastics, felt, leather, and similar materials fall into this same range. U. V. Process Supply's Durometer Shore A meets or exceeds current ASTM D2240 Specifications.

Hardness is one of the most significant physical properties of elastomeric compounds. The hardness reflects all, or in part, such other qualities as resilience, durability, uniformity, tensile strength, and abrasion resistance.

SPECIFICATIONS

1.	Shore A	Meets or exceeds current ASTM D2240 Specifications.
2.	Range (Type A)	0 to 100 points.
3.	Accuracy	±1 point.
4.	Dimensions:	
	Height	4 in. (10.2 cm).
	Width	2-1/4 in. (5.7 cm).
	Depth	1-3/4 in. (4.4 cm).
5.	Weight	8 oz. (227 g).
6.	Shipping weight	2 lbs. (907 g).

FEATURES

ACCURACY:	Meets or exceeds current ASTM D2240 Specifications.
DEPENDABILITY:	Rugged construction, with all working parts totally enclosed.
VERSATILITY:	As either portable or test stand unit mounted in any orientation.
ECONOMY:	Low initial expense and long working life.
GUARANTEED:	Workmanship and materials for one year from date of purchase.

DESCRIPTION

The mainspring is precision wound from special high carbon steel, heat-treated for long life and center-less ground for accuracy. Each instrument is individually calibrated to ASTM specifications. The special cam adjustment allows complete control over the extension reading on the dial. Accurate readings can be obtained in any position.

The durometer comes with an ancillary hand which records the peak reading. The hand is held by a non-impeding magnetic clutch. The ancillary hand is reset by means of a knob on the acrylic cover.

An 8-32 threaded mounting knob at the top of the durometer permits test stand emplacement. The instrument is finished in fine blue mottle. Each durometer comes complete with a test block and carrying case.

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CERTIFICATION SERVICE

A 10-point certification for the Shore A Durometer is available from U. V. Process Supply. Calibration equipment is traceable to the National Institute of Standards and Technology (formerly the National Bureau of Standards). Each certification provides as received and as certified data. The points calibrated are 10, 20, 30, etc. over the durometer's scale from 0 to 100. An additional charge per point will be made if the customer specifies alternative points or intervals. Certifications are only available for durometers, test blocks are not certifiable.

OPERATING INSTRUCTIONS

The following procedures are based on ASTM Standard D2240. This standard is recognized as being definitive, however, not all applications require such stringent controls.

Readings below 10/A may be inexact and should not be reported for some materials. Readings above 90/A should be made on a Type D durometer.

The surface of the sample to be tested shall be clean and smooth. The sample should be at least 1/4" (6 mm) in thickness unless it is known that identical results are obtained with a thinner specimen. Thinner materials can be stacked to obtain the minimum thickness (DO NOT GLUE). Such results may not agree exactly with those of a solid specimen. The sample should be large enough so that the indenter is at least 1/2" (12 mm) from any edge unless it is known that identical results are obtained when measurements are made closer to the edge. The surface of the specimen shall be flat over a sufficient area to permit the presser foot to contact the specimen over an area having a radius of at least 1/4" (6 mm) from the indenter point. The temperature of the specimen should be 73.4°F ±3.6°F (23°C ±2°C). The specimen should be allowed to rest at this temperature for at least 1 hour prior to testing, as the properties of most materials change with temperature.

Place the specimen on a hard, horizontal surface. Set the ancillary hand of the durometer below 5 points on the dial. Hold the durometer vertically with the point of the indenter at least 1/2" (12 mm) from any edge. Apply the presser foot to the specimen as rapidly as possible, without shock, keeping the foot parallel to the surface of the specimen. Apply just sufficient force to obtain firm contact between the presser foot and the specimen. Hold for 1 or 2 seconds, the maximum reading can be obtained from the ancillary hand. If other than a maximum reading is needed, hold the durometer in place without motion and obtain the reading after the required time interval. Make 5 tests at least 1/4" (6 mm) apart and use the average value.

CALIBRATION CHECK

1. Insert the indenter into the hole of the calibrated test block. Apply enough force to make firm contact between the top surface of the test block and the presser foot. The dial reading should agree with the value stamped on the test block. Make several readings.

2. A second check is that the indenter must protrude 0.098 to 0.100 inches below the presser foot.

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