Hardness testing of plastics (Shore)

To determine the hardness of plastics, in 1915 Albert Shore developed an extremely simple process: A pin made of hardened metal and of a defined shape is held by a spring and is then pushed into the test item. Depending on the depth of the penetration, the material tested is either harder or softer. This procedure is described in DIN ISO 7619-1.

Currently, there are two types of devices used for this test: Mechanical measuring devices with drag indicator and electronic measuring devices.

Both types of measuring devices can be operated with test stands (such as the SAUTER TI series). With a test stand, measurements can be carried out more consistently and accurately.

At this time, KERN does not calibrate Shore hardness testing instruments. As an alternative, we recommend that the measuring device is operated with a calibrated kit of hardness comparison plates (such as SAUTER AHBA 01).

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Hardness testing of plastics

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Quick-Finder

Readout [d] HS	Measuring range [Max] HS	Hardness type	**Model** **SAUTER**	**Price** excl. VAT, ex works **€**	Page
1,0 HA	100 HA	A	**HBA 100-0**	**105,–**	64
1,0 HA0	100 HA0	A0	**HB0 100-0**	**135,–**	64
1,0 HD	100 HD	D	**HBD 100-0**	**140,–**	64
0,1 HA	100 HA	A	**HDA 100-1**	**375,–**	65
0,1 H0	100 H0	0	**HD0 100-1**	**375,–**	65
0,1 HD	100 HD	D	**HDD 100-1**	**375,–**	65
–	–	A/A0	**TI-AC**	**240,–**	66
–	–	D	**TI-D**	**300,–**	66
–	–	A/0	**TI-ACL**	**300,–**	66
–	–	D	**TI-DL**	**360,–**	66


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Compact handheld durometer with drag indicator

06

Features

- Typical application: measurement of penetration (Shore)
- Particularly recommended for internal comparison measurement. Standard calibrations e. g. to DIN 7619-1 are not possible because of very narrow standard tolerances
- Shore A rubber, elastomers, neoprene, silicone, vinyl, soft plastics, felt, leather and similar material
- Shore D plastics, formica, epoxides, plexiglass etc.
- Shore A0 foam, sponge etc.
- Max mode: Records the peak value indication by drag pointer
- Can be attached to the test stands SAUTER TI-AC (for Shore A and A0), TI-D. (for Shore D)
- 1 Delivery in a plastic box
- The measuring tips are not interchangeable

Technical data

- Measuring precision: 3 % of [Max]
- Dimensions W×D×H 60×25×115 mm
- Net weight approx. 160 g
- Screws to screw on to the TI: M7 fine thread
- Material thickness of the sample, min. 4 mm

Accessories

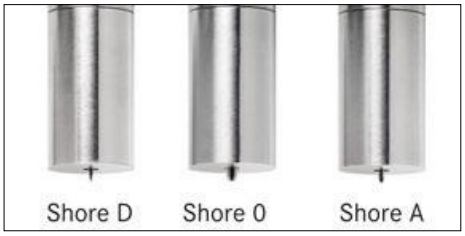
Shore comparison plates for testing and calibration of Shore hardness testing devices. By regular comparison, the measuring accuracy increases significantly.

- 2 7 hardness comparison plates for Shore A, tolerance up to ± 2 HA, SAUTER AHBA-01, **€ 95,–**
- 3 3 hardness comparison plates for Shore D, tolerance up to ± 2 HD, SAUTER AHBD-01, **€ 75,–**
- Factory calibration of the comparison plates, SAUTER 961-170, **€ 95,–**
- Test stand for HBA and HB0, SAUTER TI-AC., **€ 240,–**
- Test stand for HBD, SAUTER TI-D., **€ 300,–**

STANDARD

PEAK 1 DAY

Model SAUTER	Hardness type	Measuring range [Max] HS	Readout [d] HS	Price excl. of VAT ex works €
HBA 100-0	Shore A	100 HA	1,0 HA	**105,–**
HB0 100-0	Shore A0	100 HA0	1,0 HA0	**135,–**
HBD 100-0	Shore D	100 HD	1,0 HD	**140,–**



Professional Shore hardness tester

Features

- Shore A, 0 and D to measure the hardness of plastics through penetration measurement
- Shore A rubber, elastomers, neoprene, silicone, vinyl, soft plastics, felt, leather and similar material
- Shore 0 foam, sponge
- Shore D plastics, formica, epoxides, plexiglass etc.
- Delivered in a robust carrying case
- Particularly recommended for internal comparison measurement. Standard calibrations e. g. to DIN 7619-1 are not possible because of very narrow standard tolerances
- Can be attached to the test stands TI-ACL (for Shore A and 0), TI-DL (for Shore D) to improve measuring uncertainty
- Large display with backlight
- Selectable: AUTO-OFF function or continuous operation, battery level indicator

Technical data

- Tolerance: 1 % of [Max]
- Overall dimensions W×D×H 65×38×162 mm
- Net weight approx. 173 g
- Transfer via RS-232 to the PC, e.g. to Microsoft Excel®
- Battery operation, batteries standard 2× 1.5 V AAA
- Material thickness of the sample, min. 4 mm

Accessories

- 1 7 hardness comparison plates for Shore A, tolerance up to ± 2 HA, SAUTER AHBA-01, **€ 95,–**
- 2 3 hardness comparison plates for Shore D, tolerance up to ± 2 HD, SAUTER AHBD-01, **€ 75,–**
- Factory calibration of the comparison plates, SAUTER 961-170, **€ 95,–**
- Test stand for HDA and HD0, SAUTER TI-ACL, **€ 270,–**
- Test stand for HDD, see page 66, SAUTER TI-DL, **€ 360,–**

STANDARD: CAL EXT, PEAK, ZERO, BATT, 1 DAY
OPTION: SOFTWARE

Model SAUTER	Hardness type	Measuring range [Max] HS	Readout [d] HS	Price excl. of VAT ex works €
HDA 100-1	Shore A	100 HA	0,1 HA	**375,–**
HD0 100-1	Shore 0	100 H0	0,1 H0	**375,–**
HDD 100-1	Shore D	100 HD	0,1 HD	**375,–**

Lever operated test stand for hardness testing with base plate made of glass

06

Features

- For Shore hardness testing of plastics, leather etc.
- 1 Glass plate: high measurement accuracy by means of superior hardness of the glass plate
- 2 Mechanical construction: Robust design for precise measuring
- 3 Level adjustment: For the precise levelling of the base plate blate, e.g. for the correction of inhomogeneous test objects
- 4 Test stand TI-DL, with exchangeable longer column for use with digital hardness tester HD
- Hardness tester not included in delivery
- Operation:
  1. The SAUTER hardness testing device HB or HD is fitted in a suspended position
  2. The test object is placed on the round testing table right under the durometer measuring tip
  3. By pressing the lever down, the test weight will be released, and this then presses the measuring tip into the test object with its own weight (see table)
- The accuracy of the displayed result is approx. 25 % higher than in a manual operated test

Technical data

- Stroke length: 15 mm
- Maximum test object height: 63 mm
- Base plate ⌀ 75 mm
- Overall dimensions W×D×H
  TI-AC: 150×110×330 mm
  TI-D: 150×110×400 mm
  TI-ACL: 150×110×380 mm
  TI-DL: 150×110×450 mm

STANDARD

FAST-MOVE 1 DAY

Model SAUTER	Suitable for	Length of column mm	Poids de contrôle kg	Net weight approx. kg	Price excl. of VAT ex works €
TI-AC	HBA, HB0	245	1	4,5	**240,–**
TI-D	HBD	245	5	8,5	**300,–**
TI-ACL	HDA, HD0	300	1	4,5	**300,–**
TI-DL	HDD	300	5	8,5	**360,–**