

Sono403™ Multi-Purpose Phantoms

Ensure accurate screening,
diagnosis and monitoring.

- Perform efficient QA testing of ultrasound systems and transducers
- Use across a variety of applications, including General Radiology, Musculoskeletal, Cardiology, Emergency, Pediatrics, Radiotherapy and Surgical
- Meet or exceed ACR, AIUM, EFSUMB, IAC, IEC, IPEM, WHO and other QA standards/guidance



Sono403 Phantoms, with patented HE (High Equivalency) Gel™, provide advanced technology for measuring image quality of small parts and intra-cavity ultrasound scanning systems.

The Sono403 offers:

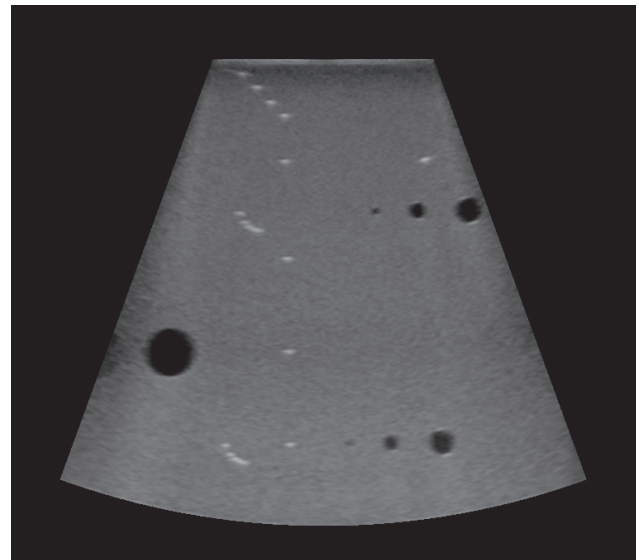
- A near-linear response of attenuation-to-frequencies between 2 to 18 MHz, due to our HE Gel
- Response of attenuation-to-frequencies over 8 MHz to support accurate axial resolution and penetration depth representative of human tissue^{1,2}

Performance measures:

- Image uniformity
- Artifact survey
- Axial and lateral resolution
- Horizontal and vertical distance
- Dead zone
- Depth of penetration
- Signal-to-noise ratio
- Anechoic and echogenic mass resolution
- Gray scale contrast resolution
- Measurement accuracy

"The tissue-like properties in these ultrasound phantoms make them ideal for testing the performance of scanners."

James A. Zagzebski, Ph.D., FAAPM
Professor Emeritus, Retired Chair
Department of Medical Physics,
Wisconsin Institutes for Medical Research



Our proven Sono403 Phantoms have precision-placed targets.

Sono403 Multi-Purpose Phantoms

- Designed for QA testing of ultrasound systems and transducers in General Radiology, Musculoskeletal, Cardiology, Emergency, Pediatrics, Radiotherapy and Surgical applications
- Rejuvenate and re-certify your phantom any time to strengthen your investment
- HE Gel offers high uniformity and a nonlinearity parameter (B/A) equivalent to human liver

Specifications

Attenuation Coefficient ¹	0.5 or 0.7 dB/cm/MHz
Variation of Attenuation with Frequency ^{2,3}	f ^{1.08} at 0.5 dB/cm/MHz f ^{1.1} at 0.7 dB/cm/MHz
HE Gel Freezing Point	< 0°C
HE Gel Melting Point	>100°C
Frequency Range	2 - 18 MHz
Speed of Sound	1540 m/s
Scanning Surface	Composite Film
Pin Target Material	Nylon monofilament
Case Material	Extruded ABS Plastic
Weight	2.8 kg (6 lbs. 5 oz)
Dimensions	23.2 x 8.25 x 18.5 cm (9.25 x 3.25 x 7.25 in.)

Target Specifications

Cystic Targets

Diameters	2, 4, 6, and 10 mm
Placement	3, 6, 8, and 14 cm deep

Grey Scale Targets

Dimensions	10 mm Diameter
Placement	6 cm deep
SOS	1540 ±10 m/s
SOS ^{TD}	1.5 m/s/°C
Contrast	-6dB, +6dB, high scatter relative to background

Pin Targets

Diameter	0.1 mm
Vertical Spacing	2 cm at 2 to 16 cm deep
Horizontal Spacing	3 cm at 2 and 12 cm deep

Resolution Target Groups

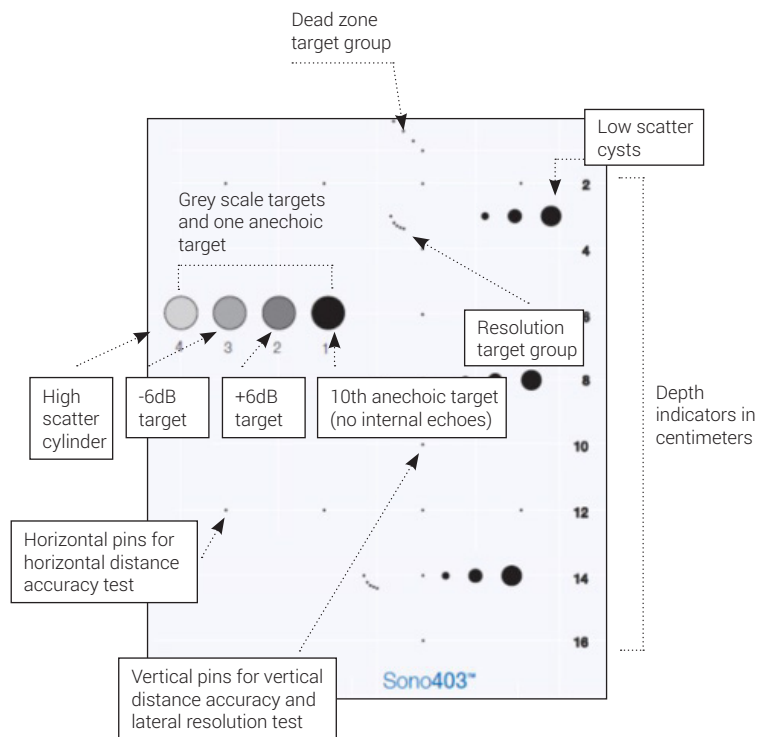
Depth	3, 8, and 14 cm deep
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Accessories

- Precision Sono Transducer Holder
 - Securely holds a transducer in a precise location for reproducible tests over time
 - Fits most Sun Nuclear B-Mode & Doppler Flow phantoms
- Padded travel case with shoulder strap



Target Schematic



¹ An attenuation coefficient of 0.5 dB/cm/MHz represents healthy human liver tissue and 0.7 dB/cm/MHz represents fatty liver tissue.

² Browne, J., Ramnarine, K., Watson, A., Hoskins, P., Assessment of the Acoustic Properties of Common Tissue-mimicking Test Phantoms. Ultrasound in Medicine and Biology, Vol. 29 (7), pp. 1053-1060, 2003.

³ Near-linear responses of attenuation with frequencies between 2 to 18 MHz support accurate axial resolution and penetration depth representative of human tissue.