

# superelastic and shape memory wire

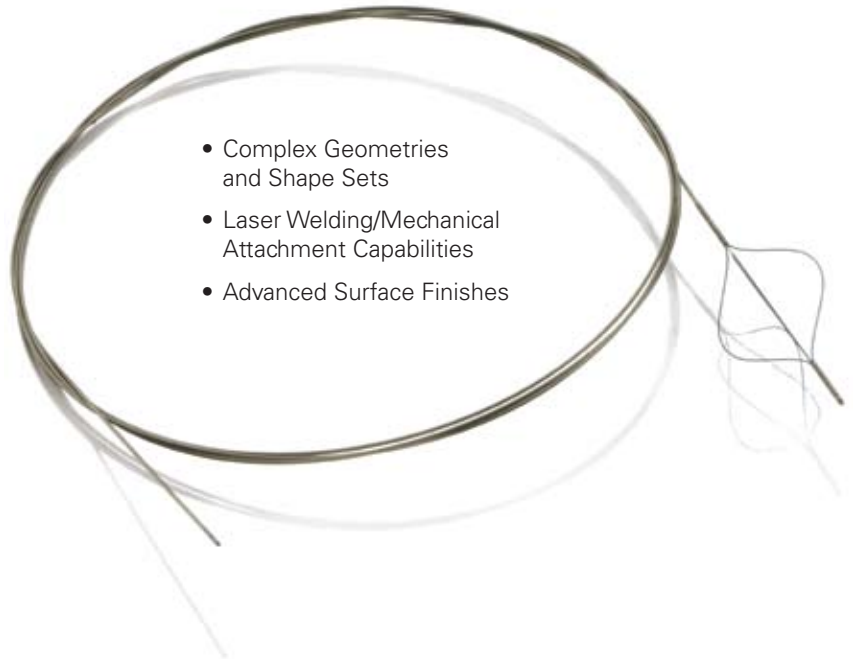


Typically sold in straight form, SAES Memry's superelastic Nitinol wire contains the high degree of flexibility and kink-resistance that also supports the most complex of medical device designs requiring intricate geometric shape sets. Our superelastic Nitinol wires exhibit excellent mechanical characteristics as a function of their chemical composition and thermal processing, resulting in a finished product that offers a low-permanent set and high-loading/unloading plateau stresses.

SAES Memry's Nitinol wire based components are an ideal enabling technology in a variety of medical device applications, including stents, catheters, guides, endodontic files, needles, trocars, mandrels, baskets, surgical instruments, snares and guidewires. SAES Memry is also well equipped to offer added-value capabilities for wire based components requiring 3D automated wire and complex shape forming, laser welding and mechanical attachment capabilities and integrated assembly in a clean room environment.



- Dark Oxide, Hard Dark Oxide, Drawn Bright, Pickled and mechanically and electro-polished surfaces
- Cold drawn or straight superelastic in continuous lengths from 0.001" to 0.175" to (0.025mm to 4.4mm) diameter
- Stranded wire from 0.003" (1x7x0.076mm) to 0.008" (1x7x0.203mm) diameter as drawn or straight superelastic



- Complex Geometries and Shape Sets
- Laser Welding/Mechanical Attachment Capabilities
- Advanced Surface Finishes



- New Plasma Weld Component Line
- Combine dissimilar materials and products (permanent tube-to-wire attachment)
- Piston Action (fluid delivery/extraction)
- Multi-wire capabilities for multiple attachment points enabling complex device design

**saes**  
**getters**



**MEMRY**<sup>®</sup>

[www.memry.com](http://www.memry.com)

highly flexible kink-resistant nickel titanium

Alloys	High Strength	Superelastic		Body Temperature		High Temperature	
	BA	BB	BC	(BTR)	BD	B	BH
As (fully annealed) [°C]	-25	-15	-5	Functional Af<35	20	50	90
Nominal loading plateau stress @ 3% strain, in Austenite	552 MPa 80,000 psi	500 MPa 72,500 psi	350 MPa 50,000 psi	294 MPa 42,500 psi	372 MPa 55,000 psi	576 MPa 83,500 psi	398 MPa 57,500 psi
Nominal Ultimate Tensile Strength in Austenite	1448 MPa 210,000 psi	1250 MPa 181,000 psi	1150 MPa 166,500 psi	1053 MPa 152,500 psi	1190 MPa 172,500 psi	1087 MPa 157,500 psi	741 MPa 107,500 psi
Max. residual elongation after 8% strain in Austenite [%]	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Min. elongation to failure in Austenite [%]	10	10	10	10	10	10	10
Main applications	Guidewires, Antenna wires	Guidewires, Stents Archwires, Implantable devices, Embolic protection	Guidewires, Thermal-actuator	Implantable devices, Stents	Archwires, Bone staples	Implantable active devices, Shapable Surgical & Orthopedic tools	Electrical & Thermal actuators

## Common Characteristics

<p><b>Diameter:</b> 0.001" (0.025mm) to 0.040" (1mm) ± 0.0003" (0.0075mm) 0.040" (1mm) to 0.100" (2.5mm) ± 0.0005" (0.0127mm) 0.100" (2.5mm) to 0.175" (4.4mm) ± 0.001" (0.025mm)</p> <p><b>Surface finish:</b> - Hard dark oxide - Dark oxide - Drawn Bright - Pickled - Mechanically or electro-polished</p> <p><b>Standard Cut-length:</b> ± 0.007" (0.18 mm) for L &lt; 12" (0.3m) <b>Tolerances:</b> ± 0.2% of specified cut-length for L &gt; 12" (0.3m)</p>	<p><b>Mechanical treatments:</b> - Cold drawn - Superelastic - Trained</p> <p><b>Typical impurity content in wt:</b> - O &lt; 250 ppm - C &lt; 250 ppm - Total all others &lt; 1000 ppm</p> <p><b>Formats:</b> Round, Square<sup>1</sup>, Rectangular<sup>1</sup>, Shaped Wires<sup>1</sup></p> <p>(1) upon request</p>
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Note: Refer to specifications for torqueability and straightness. Burr-free or shear-cut available.

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