

# Nitinol™ Nickel Titanium Shape Memory Alloys



Nickel Titanium (also known as Nitinol) is the unique class of materials known as shape memory alloys. A thermoelastic martensitic phase transformation in the material is responsible for its extraordinary properties. These properties include the shape memory effect, superelasticity, and high damping capability. The properties of Nitinol can be modified to a great extent by changes in alloy composition, mechanical working, and heat treatment. In most cases a trial and error process is required to optimize these factors for a particular application.

Alfa Aesar offers a wide variety of NiTi components to meet your unique requirements. In addition, many standard items are in stock for immediate delivery.

## Tubing:

- Outer Diameter (O.D.) from 0.005" to 0.250" (0.125 to 6.4 mm)
- Wall Thickness down to less than 0.002" (0.05 mm) dependent upon O.D. size

## Wire & Ribbon:

- Wire: diameters form 0.001" (0.025 mm) to 0.080" (2 mm) and above
- Straight superelastic Nitinol wire with oxide; diameter from 0.0050 to 0.0230 mm
- Ribbon and Strip: from 0.001" x 0.002" (0.025 mm x 0.05 mm) to 0.030" x 0.400" (0.75 mm x 10mm)
- Stranded Wire: many different configurations available
- NiTi ACTM Wire: Nitinol filled with alternate materials for conductivity, radiopacity, etc.

## Sheet:

- Thickness down to 0.007" (0.018mm)
- Width of about 1" to 4" (25 to 100mm)

Thickness (mm)	Width (Inches)	Length (Inches)
0.0050	1.75	12
0.0075	3.50	12
0.0100	3.50	12
0.0125	3.50	12

## Nitinol Educational Products, Kits and Books:

A variety of products is also available to improve your knowledge of NiTi technology...

- Demo Wires and Springs
- Nitinol Engineering Kit (stock #44486) - A general introduction to Nitinol shape memory and superelastic technologies
- Nitinol Soldering Kit (stock #44487) - An introduction to methods for joining Nitinol to other Nitinol and many other materials; includes SMA's proprietary soldering flux, Nitinol Flux 400TM
- SMST Conference Proceedings: contains technical papers from the well-known series of Shape Memory and Superelastic Technology Conferences

For a list of Nitinol products from Alfa Aesar, please go to

[http://www.alfa.com/ALF/Product%20Indexes/Alfa\\_Complete/nitinol.html](http://www.alfa.com/ALF/Product%20Indexes/Alfa_Complete/nitinol.html)

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