

Nitinol SM495 Wire*

PHYSICAL PROPERTIES

Melting Point:	2390°F	1310°C
Density:	0.234 lb/in ³	6.5 g/cm ³
Electrical Resistivity:	30 μohm-in	76 μohm-cm
Modulus of Elasticity:	4-6 x 10 ⁶ psi	28-41 x 10 ³ MPa
Coefficient of Thermal Expansion:	3.7 x 10 ⁻⁶ /°F	6.6 x 10 ⁻⁶ /°C

MECHANICAL PROPERTIES

Ultimate Tensile Strength (min. UTS):	160 x 10 ³ psi	1100 MPa
Total Elongation (min):	10%	10%

SHAPE MEMORY PROPERTIES

Loading Plateau Stress @ 3% strain (min):	15 x 10 ³ psi	100 MPa
Shape Memory Strain (max):	8.0%	8.0%
Transformation Temperature (A _f):	140° F	60° C

COMPOSITION (Meets ASTM F2063 requirements)

Nickel (nominal):	54.5 wt.%
Titanium:	Balance
Oxygen (max):	0.05 wt.%
Carbon (max):	0.02 wt.%

COMMENTS

These values should only be used as guidelines for developing material specifications. Properties of Nitinol Alloys are strongly dependent on processing history and ambient temperature. The mechanical and shape memory properties shown here are typical for standard shape memory straight wire at room temperature tested in uniaxial tension. Bending properties differ, and depend on specific geometries and applications. Modulus is dependent on temperature and strain. Certain shapes or product configurations may require custom specifications. Materials are also available in the cold-worked or annealed conditions.

**All values are typical, at room temperature. SM495 is a binary alloy suitable for shape memory applications with transformation temperatures greater than 60°C.*

