Nitinol SM495 Wire*

PHYSICAL PROPERTIES
Melting Point: 2390°F 1310°C
Density: 0.234 lb/in³ 6.5 g/cm³
Electrical Resistivity: 30 µohm-in 76 µohm-cm
Modulus of Elasticity: 4-6 x 10⁶ psi 28-41 x 10³ 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 10³ psi 1100 MPa
Total Elongation (min): 10% 10%

SHAPE MEMORY PROPERTIES
Loading Plateau Stress @ 3% strain (min): 15 x 10³ psi 100 MPa
Shape Memory Strain (max): 8.0% 8.0%
Transformation Temperature (Aₘ): 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.