

Superelastic Nitinol Alloys*

SE508ELI

SE508

SE510

PHYSICAL PROPERTIES

Melting Point:	1310°C	1310°C	1310°C
Density:	6.5 g/cm ³	6.5 g/cm ³	6.5 g/cm ³
Electrical Resistivity:	82 μohm-cm	82 μohm-cm	82 μohm-cm
Modulus of Elasticity:	41 - 75 GPa	41 - 75 GPa	41 - 75 GPa
Coefficient of Thermal Expansion:	11 x 10 ⁻⁶ / °C	11 x 10 ⁻⁶ / °C	11 x 10 ⁻⁶ / °C

SUPERELASTIC PROPERTIES (Per ASTM F2516)

Upper Plateau Stress @ 3%	≥380 MPa	≥380 MPa	-25% > SE508
Permanent Set (after 6% strain)	≤0.3%	≤0.3%	≤ 0.3%
Ultimate Tensile Strength:	≥ 1070 MPa	≥1070 MPa	≥1070 MPa
Total Elongation:	≥10%	≥10%	≥10%

TRANSFORMATION TEMPERATURE (Per ASTM F2004)

Ingot Austenite Finish (A _f)	-25 to 5°C	-25 to 5°C	-65 to -25°C
Finished Product A _f	-25 to 30°C	-25 to 30°C	-65 to 10°C

COMPOSITION (Meets ASTM F2063 requirements)

Nickel (nominal):	55.8 wt.%	55.8 wt.%	56.0 wt.%
Titanium:	Balance	Balance	Balance
Oxygen:	≤ 0.01 wt.%	≤ 0.04 wt.%	≤ 0.04 wt.%
Carbon:	≤ 0.005 wt.%	≤ 0.02 wt.%	≤ 0.02 wt.%
Inclusion Area Fraction:	≤ 0.5%	≤ 2.8%	≤ 2.8%

APPLICATIONS

SE508ELI is our high purity material for your most safety-critical applications. ELI, with its fewer and smaller inclusions, is the preferred material choice for high cycle fatigue applications

SE508 is our flagship material with over two decades of proven success as the world's most implanted Nitinol material.

SE510 has a lower transformation temperature that results in a stiffer feel compared to SE508. Typical application is guidewires with enhanced kink resistance.

* 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 superelastic properties shown here are typical for standard superelastic straight Nitinol 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.