Material Data Sheet

# Nitinol SE508 Wire*

## PHYSICAL PROPERTIES

| | | |
|---|---|---|
| Melting Point: | 2390°F | 1310°C |
| Density: | 0.234 lb/in$^3$ | 6.5 g/cm$^3$ |
| Electrical Resistivity: | 32 µohm-in | 82 µohm-cm |
| Modulus of Elasticity: | 6-11 x 10$^6$ psi | 41-75 x 10$^3$ MPa |
| Coefficient of Thermal Expansion: | 6.1 x 10$^{-6}$/°F | 11 x 10$^{-6}$/°C |

## MECHANICAL PROPERTIES

| | | |
|---|---|---|
| Ultimate Tensile Strength (UTS): | 160-200 x 10$^3$ psi | 1100-1150 MPa |
| Total Elongation (min): | 10% | 10% |

## SUPERELASTIC PROPERTIES

| | | |
|---|---|---|
| Loading Plateau Stress @ 3% strain (min): | 65 x 10$^3$ psi | 450 MPa |
| Permanent Set (after 6% strain) (max): | 0.2% | 0.2% |
| Transformation Temperature ($A_f$): | 41 to 64° F | 5 to 18° C |

## COMPOSITION (Meets ASTM F2063 requirements)

| | |
|---|---|
| Nickel (nominal): | 55.8 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 superelastic properties shown here are typical for standard superelastic 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. SE508 is a binary alloy suitable for superelastic applications at room and/or body temperature.*

CONFLUENT

Confluent Medical Technologies • 47533 Westinghouse Drive • Fremont, California 94539
(510) 683-2000 • Fax: (510) 683-2001 • sales@confluentmedical.com • confluentmedical.com

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