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NITINOL SUPERELASTIC TUBING

Nitinol Tubing, ASTM F 2633 Material Data

All values are typical, at room temperature. Nitinol is a binary alloy suitable for superelastic applications at room and/or body temperature.

Alloy Composition according to ASTM F 2063

Nickel (nominal)	54,5 - 57 wt.-%
Titanium	balance
Oxygen + Nitrogen	max. 0,05 wt.-%
Carbon	max. 0,05 wt.-%

Physical Properties

Melting Point	1310° C
Density	6,5 g/cm^3
Electrical Resistivity	82 μOhm x cm
Coefficient of Thermal Expansion	11 x 10^{-6}/°C
Modulus of Elasticity	41-75 x 10^3 MPa

Mechanical Properties according ASTM F 2633 Table1

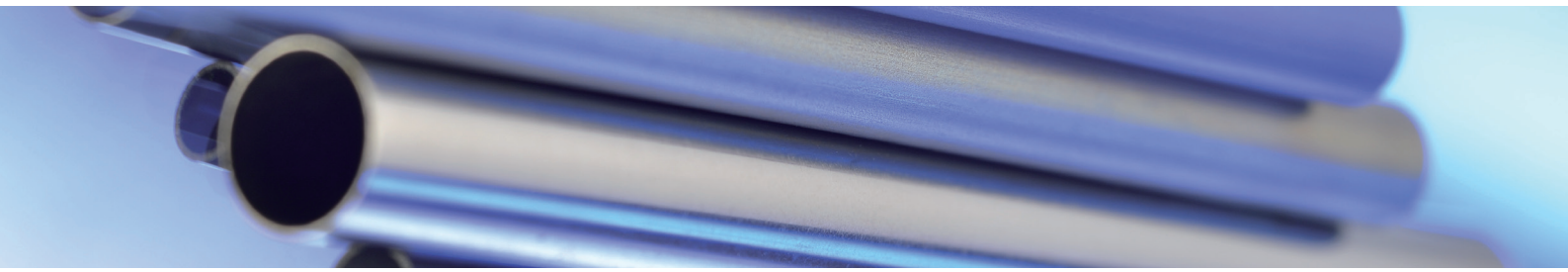
Ultimate Tensile Strength (UTS)	min. 1000 MPa
Uniform Elongation	min. 10%

Superelastic Properties according ASTM F 2633

Loading Plateau Stress (at 3% strain)	min. 380 MPa
Permanent Set (after 6% strain)	max. 0,3%
Transformation Temperature A_f	max. 15° C

Comments

These values should only be used as guidelines for developing material specifications. Properties of Nitinol are strongly dependent on processing history and ambient temperature. The mechanical and superelastic properties shown here are typical for standard superelastic straight tubes at room temperature tested in uniaxial tension. Bending properties differ, and depend on specific geometries and applications. Modulus is dependent on temperature and strain. Larger tubes (> 3,9 mm OD) may require custom specifications.



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