



Ni-Ti Tubes Tubing Specification

Tubing Tolerances

Outer Diameter	Surface Finish	OD Tolerance +/-	Wall Thickness Tolerance +/-
0.020" - 0.049"	} oxide centerless grind	0.0005" 0.013mm	0.0005" 0.013mm
0.50mm - 1.25mm		0.0004" 0.010mm	0.0005" 0.013mm
0.050" - 0.100"	} oxide centerless grind	0.0008" 0.020mm	0.0005" 0.013mm
1.27mm - 2.54mm		0.0005" 0.013mm	0.0005" 0.013mm
0.101" - 0.150"	} oxide centerless grind	0.0010" 0.025mm	0.0006" 0.015mm
2.56mm - 3.81mm		0.0006" 0.015mm	0.0006" 0.015mm
0.151" >	} oxide centerless grind	0.0012" 0.030mm	0.0008" 0.020mm
3.83mm >		0.0007" 0.018mm	0.0008" 0.020mm

Tubing tolerances listed are for standard process. Tighter tolerance available upon request.

Chemical Composition (reference ASTM F2063)

Nickel (nominal)	55.8 ± 0.5 wt. %
Carbon (max)	0.07 wt. %
Cobalt, (max)	0.05 wt. %
Copper (max)	0.01 wt. %
Chromium (max)	0.01 wt. %
Hydrogen (max)	0.005 wt. %
Iron (max)	0.05 wt. %
Niobium (max)	0.025 wt. %
Oxygen (max)	0.05 wt. %
Titanium	balance

Low inclusion Nitinol available upon request.

Superelastic Mechanical Properties

Loading Plateau Stress (min)	55 ksi
Unloading Plateau Stress (min)	15 ksi
Permanent Set after 6% strain (max)	0.3%
Permanent Set after 8% strain (max)	0.5%
Ultimate Tensile Strength, UTS (min)	155 ksi
Total Elongation (min)	10%

Transformation Temperature (reference ASTM F2004)

Ingot:	As -10 C +/-5 C
Tubing:	Af <15 C