

Material for Value-Tec fine, industrial and fibre grip tweezers

The material used for manufacturing the Value-Tec fine, industrial and fibre grip tweezers is a selected grade of non-magnetic AISI 202 stainless steel.

It is used for the following Value-Tec tweezers:

[#50-014010 through #50-014220 Value-Tec fine tweezers](#)

[#50-014X20 through #50-014X70 Value-Tec reversed fine tweezers](#)

[#50-014310 through #50-014386 Value-Tec industrial strong tweezers](#)

[#50-014462 through #50-014482 Value-Tec fiber grip tweezers](#)

General remarks:

- AISI 202 is an austenitic stainless steel (DIN 1.4373, X12CrMnNNi 18-9-5) and is a cost effective replacement for 304, 302 and 310 stainless steel with a lower Ni content
- Contains 17 – 19 wt% Chromium and contains significant amounts of Manganese and Nickel as additional alloy component. N is added to increase strength.
- Normally non-magnetic, but becomes magnetic when cold worked
- Can be hardened by heat treatment and precipitation hardening
- Can be work hardened, annealing is recommended for stress relieving
- Moderate corrosion resistance to most solvents, salts and moderate acids
- Generally used where both strength and corrosion resistance are required
- Typical applications include tweezers, tools, cooking equipment, hose clamps and architectural products

General composition of AISI 202

Element	Wt. %
C	≤0.15
Cr	17.0 – 19.0
Ni	4.0 – 6.0
Mn	7.5 – 10.0
Si	≤1.0
N	≤0.25
P	≤0.06
S	≤0.03
Fe	Balance

Properties of AISI 304

Mechanical Properties	
State	Annealed
Density	7.8 g/cm ³
Hardness Rockwell B	90
Hardness Rockwell C	27
Tensile strength, ultimate	515 MPa
Tensile strength, yield	275 MPa
Elongation until break	40%
Modulus of Elasticity	207 GPa
Poisson's ratio	0.29
Thermal Properties	
Coefficient of thermal linear expansion	17.3 x 10 ⁻⁶ /°C (20-100°C)
Coefficient of linear thermal expansion	17.8 x 10 ⁻⁶ /°C (20-300°C)
Specific heat capacity	0.50 J/(g.K)
Thermal conductivity	16.3W/(m.K)
Continuous use (service) temperature	500°C
Maximum service temperature (short)	870°C
Electrical Properties	
Resistivity	0.69 x 10 ⁻⁴ Ohm.cm

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