

Technical Datasheet: Stainless steel type SA

General Notes

- **low carbon austenitic steel** (Material number 1.4435, DIN X2CrNiMo18-14-3, AISI number 316L)
- contains from 16.5 to 18.5 wt% chromium and has important quantities of nickel and molybdenum as additional alloying elements
- non-magnetizable
- good corrosion resistance to most chemicals, salts and acids
- generally used where corrosion resistance and toughness are primary requirements
- typical applications include tweezers for the electronic industry, watch-makers, jewelers and laboratory and medical applications in moderately aggressive chemical environments

Composition

Component	Wt. %	Component	Wt. %	Component	Wt. %
C	≤0.03	Si	≤1.0	Mn	≤2.0
P	≤0.045	S	≤0.03	Cr	17.0-19.0
Mo	2.5-3.0	Ni	12.5-15.0		

Mechanical properties:

State	annealed
Density	8.0 g/cm ³
Hardness HB30	≤215
Hardness Rockwell B	79
Tensile strength, ultimate:	500-700 MPa
Tensile strength, yield	290
0.2% Yield stress	≥200 MPa
Elongation, break	40%
Modulus of elasticity	200 GPa

Thermal properties

Coef. of lin. therm expansion:	16.0 E-6/°C	20°C-100°C
Coef. of lin. therm expansion:	17.0 E-6/°C	20°C-300°C
Specific heat capacity:	0.50 J/(g·K)	
Thermal conductivity:	15 W/(m·K)	
Continuous use temperature:	350°C	
Max service temperature, air	925°C	

Electrical properties

Resistivity	0.75 E-4 Ohm.cm
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