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Technical Datasheet: Stainless steel type SA

General Notes

- **low carbon austenitic steel** (Material number 1.4404, DIN X2CrNiMo17-12-2, AISI number 316L, Thyssen Steel)
- 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 tools and equipment for laboratory and medical applications in mild 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	16.5-18.5
Mo	2.0-2.5	Ni	10.0-13.0		

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)	
Continuos use temperature:	300°C	
Max service temperature, air	925°C	

Electrical properties

Resistivity	0.75 E-4 Ohm.cm

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