

## 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 <sup>3</sup>
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:	300°C	
Max service temperature, air	925°C	

### Electrical properties

Resistivity	0.75 E-4 Ohm.cm
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## Technical Datasheet: Engineering coating type DR

### General notes

- **NBR** vulcanized nitrile rubber
- very soft and elastic, good tear resistance
- outstanding abrasion/wear resistance (improved life-time)
- good chemical resistance (oils, grease, fuels, acid, detergents and soaps ); good hydrolytic resistance (hot water)
- electrically static dissipative, low surface resistivity ( $10^8$ - $10^9$  Ohm), ESD-safe material!
- typical applications include ESD-safe handles, floor and work surface mats

### Mechanical properties

Hardness, Shore A	30	
Tensile modulus 100%	0.6 MPa	DIN 53504, 23°C
Tensile modulus 200%	1.1 MPa	DIN 53504, 23°C
Tensile modulus 300%	1.8 MPa	DIN 53504, 23°C
Tensile modulus 400%	2.6 MPa	DIN 53504, 23°C
Tensile strength, ultimate	10.4 MPa	DIN 53504, 23°C
Elongation at break	817.3 %	DIN 53504, 23°C

### Thermal properties

Continuous Use Temperature	100°C	20'000 h
Short Time Temperature	120°C	

### Electrical properties

Surface resistivity:	$10^8$ - $10^9$ Ohm
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### Other properties

Density	1.10 g/ccm	ISO 1183
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