

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 (80%)
- » 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/cm³ |
| Hardness, Vickers | 230 HV |
| 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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