Alleima® 5R10/2R25 medical wire
Wire
Datasheet

Alleima® 5R10 and Alleima® 2R25 are austenitic chromium-nickel stainless steels. Alleima® 2R25 is a low carbon version of Alleima® 5R10. The grades are characterized by:

- Good corrosion resistance
- Excellent toughness
- Good welding characteristics

Standards

- ASTM: 304, 304L
- UNS: S30400, S30403
- EN Number: 1.4301, 1.4306
- EN Name: X5CrNi18-10, X2CrNi19-11
- W.Nr.: 1.4301, 1.4306
- DIN: X5 CrNi 18 10, X2 CrNi 19 11
- SS: 2332, 2352
- AFNOR: Z6 CN 18 09, Z3 CN 18 10
- BS: 304S31

Product standards

- ASTM F899
- ISO 16061

Applications

These grades are mainly used for surgical instruments and dental tools.

Chemical composition (nominal) %

	C	Si	Mn	Cr	Ni
Alleima® 5R10	≤0.07	≤0.75	≤2.0	18.5	9
Alleima® 2R25	≤0.03	≤0.7	≤1.5	18.5	10

Forms of supply

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Wire form

- In coils with weights up to 150 kg
- On various types of spool with wire weights up to 500 kg
- In straightened lengths up to 4 m

Surface finishes and size range

Surface finish	Size range, mm
Coated	0.20 - 8.00
Bright	0.11 - 0.80
Mechanically polished	0.40 - 6.00

Mechanical properties

Typical mechanical properties for Alleima® 5R10 and Alleima® 2R25 at 20°C.

Grade	Tensile strength Rm	Proof strength $Rp_{0.2}$	Elongation	Hardness	
	MPa	MPa	%	HRB	HB
Alleima® 5R10	≥515	≥205	≥40	≤92	≤201
Alleima® 2R25	≥485	≥170	≥40	≤92	≤201

Physical properties

Typical physical properties for annealed Alleima® 5R10 and Alleima® 2R25 are given below :

Grade	Density	Elastic Moduls	Mean Coefficient of Thermal Expansion	Thermal Conductivity	Specific Heat	Resistivity
	g/cm³	10^3 MPa	mm/m/°C	W/m °C	J/kg °C	µΩm
			0-100 °C	at 100 °C	0-100 °C	20 °C
Alleima® 5R10/2R25	8	193	17	16	500	0.72

Corrosion resistance

Excellent corrosion resistance in a wide range of atmospheric environments and various corrosive media.

Subject to pitting and crevice corrosion in warm chloride media and to stress corrosion cracking at temperatures above 60°C.

Considered resistant to potable water with up to approximately 200mg/l chlorides, at ambient temperatures, reducing to approximately 150 mg/l, at 60°C.

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