



R910.42

EN: 1.3917
UNS: K94100
Alloy 42

R910.42, (1.3917) is an soft magnetic Fe-Ni alloy. The grade has low and nominally constant coefficient of thermal expansion from the temperature range 20-300°C. The grade is used for applications in which dimensional stability is required, fasteners for aerospace, automotive, glass sealing etc.

CHEMICAL COMPOSITION (Nominal) %

C	Si	Mn	Cr	Ni
0.02	0.20	0.5	0.2	41.8

PHYSICAL PROPERTIES

Condition: D-cooled

Density	8.11 g / cm ³
Modulus of elasticity, E	145 GPa
Specific heat 20°C	500 J / kg°C

TYPICAL MECHANICAL PROPERTIES

Condition: D-cooled

Proof strength	Rp0.2	>250 N / mm ²
Tensile strength	Rm	480-520 N / mm ²
Elongation	A10	30 %

THERMAL TREATMENT

Annealing temperature	850-1000 °C
	1560-1830 °F

MAX. OPERATING TEMPERATURE

Operating temp. in air	300 °C
	570 °F

THERMAL CONDUCTIVITY

20 °C	10.5 W / m°C
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THERMAL EXPANSION

	Total Expansion 10 ⁻³	CTE
100 °C	0.42	5.3
200 °C	0.95	5.3
300 °C	1.48	5.3

RESISTIVITY

20 °C	6,1 μΩmm
100 °C	7,0 μΩmm
200 °C	8,7 μΩmm
300 °C	10,1 μΩmm