



R359.10

EN: 1.4541

UNS: 321

R359.10 is a titanium (Ti) stabilized stainless steel with excellent resistance to intergranular corrosion following exposure to temp. in the chromium carbide precipitation range from 430-820°C (810-1510°F). This steel is also well-suited for high temp. service because it possesses good mechanical properties. Exposure in the temp. range 430-820°C affects the overall corrosion resistance in this grade more than in the Cb-alloyed R358.10 steel (Type 347). Typical applications are fasteners, wire cloths, screens and welded constructions.

CHEMICAL COMPOSITION (Nominal) %

C	Si	Mn	Cr	Ni	Mo	N	Ti*	
0.030	0.50	1.15	17.8	9.2	<0.60	<0.020	0.35	

PRE: 19 (PRE = Cr + 3.1 x Mo + 25 x N)

Comments: *min. 5x%C

PHYSICAL PROPERTIES

Condition: Annealed

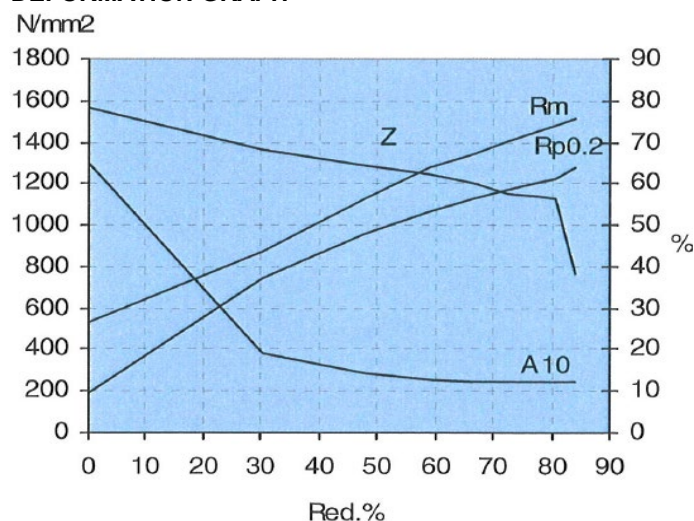
Density	7.9 g / cm ³
Modulus of elasticity, E	200 000 GPa
Specific heat 0-100°C	480 J / kg°C

TYPICAL MECHANICAL PROPERTIES

Condition: Annealed

Proof strength	Rp0.2	min.170 N / mm ²
Tensile strength	Rm	500-600 N / mm ²
Elongation	A10	min.50 %

DEFORMATION GRAPH



THERMAL TREATMENT

Annealing temperature	1050-1120 °C
	1950-2050 °F

MAX. OPERATING TEMPERATURE

Operating temp. in air	°C
	°F
Scaling temp. in air	850 °C
	1560 °F

THERMAL CONDUCTIVITY

20 °C	15.0 W / mK
100 °C	15.5 W / mK
200 °C	17.5 W / mK
400 °C	20.0 W / mK
600 °C	22.5 W / mK
800 °C	25.5 W / mK

THERMAL EXPANSION

Thermal expansion per °C x 10-6 from 20°C to:

100 °C	16.0
200 °C	16.5
400 °C	17.5
600 °C	19.0
800 °C	19.5
1000 °C	20.0

RESISTIVITY

20 °C	700 μΩmm
100 °C	750 μΩmm
200 °C	800 μΩmm
400 °C	950 μΩmm
600 °C	1050 μΩmm
800 °C	1150 μΩmm