

R800.11

EN: 1.4833

Type 309S

R800.11 is a heat resistant austenitic Cr-Ni-steel with superior heat resisting properties at elevated temperatures and scale-resistant to approx. 1100°C (2010°F) in oxidation atmospheres. Is subjected to precipitation and scaling when heated in temp. range of 600-850°C (1100-1560°F). R800.11 is sensitive for SO₂ and particularly gases containing H₂S at temp. 650°C (1200°F). This grade has slightly better corrosion resistance than type 304. Typical applications are wire for furnace parts, wire cloths and screens and tube hangers.

CHEMICAL COMPOSITION (Nominal) %

C	Si	Mn	Cr	Ni	Mo	N		
0.040	0.40	1.75	22.3	14.7	<0.60	<0.080		

PRE: 24 (PRE = Cr + 3.1 x Mo + 25 x N)

Comments:

PHYSICAL PROPERTIES

Condition: Annealed

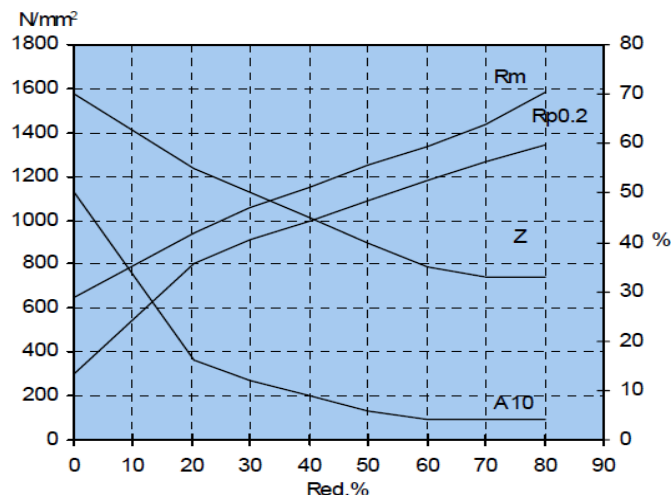
Density	7.9 g / cm ³
Modulus of elasticity, E	200 000 GPa
Specific heat 0-100°C	500 J / kg°C

TYPICAL MECHANICAL PROPERTIES

Condition: Annealed

Proof strength	Rp0.2	min. 250 N / mm ²
Tensile strength	Rm	600-700 N / mm ²
Elongation	A10	min. 45 %

DEFORMATION GRAPH



THERMAL TREATMENT

	°C	°F
Annealing temperature	1050-1150	1920-2100

MAX. OPERATING TEMPERATURE

	°C	°F
Scaling temp.	1100	2010
Oxidizing atm. intermitt. / cont.	980-1100	1796-2012
Reducing sulphurous atm.	Not recom.	Not recom.
Carburizing/carbonitriding atm.	930	1710
Diss. ammonia and hydrogen at.	930	1710

THERMAL CONDUCTIVITY

20 °C	15.0 W / mK
100 °C	15.6 W / mK
500 °C	18.7 W / mK

THERMAL EXPANSION

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

200 °C	15.5
400 °C	17.0
600 °C	18.0
800 °C	18.5
1000 °C	19.5

RESISTIVITY

20 °C	780 μΩmm
650 °C	1140 μΩmm