

Industeel CLC 18.10 Nb Niobium Stabilized 18Cr-10Ni Austenitic Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel , T S30000 Series Stainless Steel

Material Notes:

CLC 18-10Nb is a 18Cr-10Ni austenitic stainless steel stabilized with specific Nb addition. This kind of steel is one of the basic grades of the stainless steels range. Niobium bearing and its low carbon content ensure better ductility and avoid the intergranular corrosion, even on welded pieces without ulterior water quenching. Alloys CLC 18-10Nb exhibit austenitic microstructures free of deleterious carbide precipitations at grain boundaries. The grade contain some residual ferrite (~ 3%) after solution annealing (1000-1100°C ≈ 1832-2012°F) and water quenching. The main properties of CLC 18-10Nb are :basic corrosion resistanceresistance against intergranular corrosionhigh ductilitymedium temperature applicationTensile properties after water quenching.Information provided by manufacturer.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Industeel-CLC-1810-Nb-Niobium-Stabilized-18Cr-10Ni-Austenitic-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	7.95 g/cc	0.287 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	520 MPa	75400 psi	
Tensile Strength, Yield	>= 200 MPa	>= 29000 psi	
	@Strain 0.200 %	@Strain 0.200 %	
	>= 240 MPa	>= 34800 psi	
	@Strain 1.00 %	@Strain 1.00 %	
Elongation at Break	40 %	40 %	
Creep Strength	210 MPa	30500 psi	
	@Temperature 600 Å°C, Time 3.60e+6 sec	@Temperature 1110 Å°F, Time 1000 hour	
Modulus of Elasticity	200 GPa	29000 ksi	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
Poissons Ratio	0.299	0.299	Calculated
Shear Modulus	77.0 GPa	11200 ksi	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
Charpy Impact	>= 150 J	>= 111 ft-lb	

Mechanical Properties	225 J Metric	166 ft-lb English	Typical Comments
	>= 100 J	>= 73.8 ft-lb	
	@Temperature -196 Â°C	@Temperature -321 Â°F	
	175 J	129 ft-lb	Typical
	@Temperature -196 Â°C	@Temperature -321 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear	16.0 Âµm/m-Â°C	8.89 Âµin/in-Â°F	
	@Temperature 20.0 - 100 Â°C	@Temperature 68.0 - 212 Â°F	
	16.5 Âµm/m-Â°C	9.17 Âµin/in-Â°F	
	@Temperature 20.0 - 200 Â°C	@Temperature 68.0 - 392 Â°F	
	17.0 Âµm/m-Â°C	9.44 Âµin/in-Â°F	
	@Temperature 20.0 - 300 Â°C	@Temperature 68.0 - 572 Â°F	
	18.0 Âµm/m-Â°C	10.0 Âµin/in-Â°F	
	@Temperature 20.0 - 500 Â°C	@Temperature 68.0 - 932 Â°F	
Specific Heat Capacity	0.500 J/g-Â°C	0.120 BTU/lb-Â°F	
	@Temperature 20.0 - 100 Â°C	@Temperature 68.0 - 212 Â°F	
Thermal Conductivity	15.0 W/m-K	104 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 20.0 - 100 Â°C	@Temperature 68.0 - 212 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.030 %	0.030 %	
Chromium, Cr	17.5 %	17.5 %	
Iron, Fe	72.27 - 73.03 %	72.27 - 73.03 %	As remainder
Nickel, Ni	9.2 %	9.2 %	
Titanium, Ti	0.24 - 1.0 %	0.24 - 1.0 %	

Electrical Properties	Metric	English	Comments
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Electrical Properties Electrical Resistivity	0.0000730 ohm-cm Metric	0.0000730 ohm-cm English	Comments
	@Temperature 20.0 - 100 Â°C	@Temperature 68.0 - 212 Â°F	

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