

Industeel CLC 18.10Ti Titanium-Stabilized 18Cr-10Ni Austenitic Stainless Steel

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

Material Notes:

CLC 18-10Ti is a 18Cr-9Ni austenitic stainless steel stabilized with some Titanium additions. This is a basic grades in the stainless steel range. Titanium bearing (carbide forming element) avoids intergranular corrosion, even on welded pieces without ulterior water quenching. Alloys CLC 18-10Ti exhibit austenitic microstructures free of deleterious carbide precipitations but with CNTi precipitations at the grain boundaries. The grade contains some residual ferrite (~ 4%) after solution annealing (1000-1100°C ≈ 1832-2012°F) and water quenching. The main properties are :Basic corrosion resistanceResistance against intergranular corrosionHeat resistant alloy (medium temperature)High ductilityInformation provided by manufacturer.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Industeel-CLC-1810Ti-Titanium-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	600 MPa	87000 psi	Typical
	500 - 700 MPa	72500 - 102000 psi	Minimum Guaranteed
Tensile Strength, Yield	>= 200 MPa	>= 29000 psi	
	@Strain 0.200 %	@Strain 0.200 %	
	>= 240 MPa	>= 34800 psi	
	@Strain 1.00 %	@Strain 1.00 %	
	280 MPa	40600 psi	Typical
	@Strain 0.200 %	@Strain 0.200 %	
	310 MPa	45000 psi	Typical
	@Strain 1.00 %	@Strain 1.00 %	
Elongation at Break	45 %	45 %	
Creep Strength	300 MPa	43500 psi	
	@Temperature 600 Â°C, Time 3.60e+6 sec	@Temperature 1110 Â°F, Time 1000 hour	
Modulus of Elasticity	200 GPa	29000 ksi	
	@Temperature 20.0 - 100 Â°C	@Temperature 68.0 - 212 Â°F	
Poissons Ratio	0.299	0.299	Calculated

Mechanical Properties	Metric	English	Comments
Shear Modulus	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
Charpy Impact	>= 150 J	>= 111 ft-lb	
	225 J	166 ft-lb	Typical
	>= 62.0 J	>= 45.7 ft-lb	
	@Temperature -269 Å°C	@Temperature -452 Å°F	
	138 J	102 ft-lb	Typical
	@Temperature -269 Å°C	@Temperature -452 Å°F	

Thermal Properties	Metric	English	Comments
CTE, linear	16.0 Åµm/m-Å°C	8.89 Åµin/in-Å°F	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
	16.5 Åµm/m-Å°C	9.17 Åµin/in-Å°F	
	@Temperature 20.0 - 200 Å°C	@Temperature 68.0 - 392 Å°F	
	17.0 Åµm/m-Å°C	9.44 Åµin/in-Å°F	
	@Temperature 20.0 - 300 Å°C	@Temperature 68.0 - 572 Å°F	
	18.0 Åµm/m-Å°C	10.0 Åµin/in-Å°F	
	@Temperature 20.0 - 500 Å°C	@Temperature 68.0 - 932 Å°F	
Specific Heat Capacity	0.500 J/g-Å°C	0.120 BTU/lb-Å°F	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
Thermal Conductivity	15.0 W/m-K	104 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.050 %	0.050 %	
Chromium, Cr	17.5 %	17.5 %	
Iron, Fe	72.55 - 73 %	72.55 - 73 %	As remainder

Component Elements Properties	Metric	English	Comments
Titanium, Ti	0.25 - 0.70 %	0.25 - 0.70 %	

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

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