

Industeel CLC 17.12.2 Ti Titanium Stabilized 18Cr-11Ni-2Mo Austenitic Stainless Steel

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

Material Notes:

CLC 17-12-2Ti is a Titanium stabilized austenitic stainless steel. 2% Molybdenum bearing ensures better corrosion resistance than CLC 18-9 L grade, particularly regarding to uniform and localized corrosion. The grade is stabilized by the addition of Titanium that avoids intergranular corrosion and ensures good mechanical properties at room and elevated temperature. Alloy CLC 17-12-2Ti is an austenitic microstructure grade, free of deleterious carbide precipitations but containing CNTi precipitations on grain boundaries. The grain is regularly fine and contains some residual ferrite (approx 4%) after solution annealing (1050-1150°C ≈ 1922-2102°F) and water quenching. The CLC 17-12-2Ti steel resists much better to wet atmosphere or solution containing chloride or fluoride addition. The steel is not seawater resistant. The alloy may be used in diluted chloridric or sulphuric acids at low temperature (= 330°C - 626°F) as well as in sour organic solutions. The grade is also well known for its high ductility, particularly when considering cold forming. Information provided by manufacturer.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Industeel-CLC-17122-Ti-Titanium-Stabilized-18Cr-11Ni-2Mo-Austenitic-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	8.00 g/cc	0.289 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	560 MPa	81200 psi	Typical
	520 - 670 MPa	75400 - 97200 psi	Minimum Guaranteed
Tensile Strength, Yield	>= 220 MPa	>= 31900 psi	
	@Strain 0.200 %	@Strain 0.200 %	
	>= 260 MPa	>= 37700 psi	
	@Strain 1.00 %	@Strain 1.00 %	
	270 MPa	39200 psi	Typical
	@Strain 0.200 %	@Strain 0.200 %	
	310 MPa	45000 psi	Typical
	@Strain 1.00 %	@Strain 1.00 %	
Elongation at Break	40 - 60 %	40 - 60 %	
Creep Strength	250 MPa	36300 psi	
	@Temperature 600 Â°C, Time 3.60e+6 sec	@Temperature 1110 Â°F, Time 1000 hour	

Mechanical Properties	200 GPa Metric	29000 ksi English	Comments
<i>Modulus of Elasticity</i>	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
Poissons Ratio	0.299	0.299	Calculated
Shear Modulus	77.0 GPa @Temperature 20.0 - 100 Å°C	11200 ksi @Temperature 68.0 - 212 Å°F	
Charpy Impact	>= 125 J	>= 92.2 ft-lb	
	225 J	166 ft-lb	Typical
	>= 100 J	>= 73.8 ft-lb	
	@Temperature -196 Å°C	@Temperature -321 Å°F	
	188 J	139 ft-lb	Typical
	@Temperature -196 Å°C	@Temperature -321 Å°F	

Thermal Properties	Metric	English	Comments
CTE, linear	16.5 Åµm/m-Å°C	9.17 Åµin/in-Å°F	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
	17.5 Åµm/m-Å°C	9.72 Åµin/in-Å°F	
	@Temperature 20.0 - 200 Å°C	@Temperature 68.0 - 392 Å°F	
	18.0 Åµm/m-Å°C	10.0 Åµin/in-Å°F	
	@Temperature 20.0 - 300 Å°C	@Temperature 68.0 - 572 Å°F	
	19.0 Åµm/m-Å°C	10.6 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
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Carbon C Component Elements Properties	0.050 % Metric	0.050 % English	Comments
Chromium, Cr	17 %	17 %	
Iron, Fe	71.25 - 71.7 %	71.25 - 71.7 %	As remainder
Molybdenum, Mo	2.1 %	2.1 %	
Nickel, Ni	11 %	11 %	
Titanium, Ti	0.25 - 0.70 %	0.25 - 0.70 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000750 ohm-cm	0.0000750 ohm-cm	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	

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