Industeel CLC 18.9 L General Purpose 18Cr-9Ni Austenitic Stainless Steel

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

Material Notes:

Description: CLC 18-9L is a 18Cr-9Ni austenitic stainless steel. The grade contains small amount of ferrite (~ 3%) after solution annealing (1000-1100°C – 1832-2012°F) and water quenching. This kind of steel is one of the basic grades of the stainless steels range. Its low carbon content ensures better ductility and avoids the intergranular corrosion, even on welded pieces without ulterior water quenching. Alloys CLC 18-9L exhibits an austenitic microstructures free of deleterious carbide precipitations at grain boundaries. The main properties of CLC 18-9L are: basic corrosion resistance, resistance against intergranular corrosion, and high ductility.Tensile properties after water quenching.Information provided by manufacturer.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Industeel-CLC-189-L-General-Purpose-18Cr-9Ni-Austenitic-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	7.90 g/cc	0.285 lb/in³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	570 MPa	82700 psi	Typical
	520 - 650 MPa	75400 - 94300 psi	Minimum Guaranteed
Tensile Strength, Yield	>= 200 MPa @Strain 0.200 %	>= 29000 psi @Strain 0.200 %	
	>= 240 MPa @Strain 1.00 %	>= 34800 psi @Strain 1.00 %	
	265 MPa @Strain 0.200 %	38400 psi @Strain 0.200 %	Typical
	305 MPa @Strain 1.00 %	44200 psi @Strain 1.00 %	Typical
Elongation at Break	45 %	45 %	
Modulus of Elasticity	200 GPa @Temperature 20.0 - 100 °C	29000 ksi @Temperature 68.0 - 212 °F	
Poissons Ratio	0.299	0.299	Calculated
Shear Modulus	77.0 GPa @Temperature 20.0 - 100 °C	11200 ksi @Temperature 68.0 - 212 °F	

Mechanical Properties	Metric	English	Comments
Charpy Impact	>= 180 J	>= 133 ft-lb	
	250 J	184 ft-lb	Typical
	>= 125 J @Temperature -196 °C	>= 92.2 ft-lb @Temperature -321 °F	
	220 J @Temperature -196 °C	162 ft-lb @Temperature -321 °F	Typical
Charpy Impact, Unnotched	158 J @Temperature 200 °C	117 ft-lb @Temperature 392 °F	Transverse
	265 J @Temperature 200 °C	195 ft-lb @Temperature 392 °F	Longitudinal

Thermal Properties	Metric	English	Comments
CTE, linear	16.0 µm/m-°C @Temperature 20.0 - 100 °C	8.89 µin/in-°F @Temperature 68.0 - 212 °F	
	17.0 µm/m-°C @Temperature 20.0 - 300 °C	9.44 µin/in-°F @Temperature 68.0 - 572 °F	
	17.0 µm/m-°C @Temperature 20.0 - 200 °C	9.44 µin/in-°F @Temperature 68.0 - 392 °F	
	18.0 µm/m-°C @Temperature 20.0 - 500 °C	10.0 µin/in-°F @Temperature 68.0 - 932 °F	
Specific Heat Capacity	0.500 J/g-°C @Temperature 20.0 - 100 °C	0.120 BTU/lb-°F @Temperature 68.0 - 212 °F	
Thermal Conductivity	15.0 W/m-K @Temperature 20.0 - 100 °C	104 BTU-in/hr-ft²-°F @Temperature 68.0 - 212 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.020 %	0.020 %	
Chromium, Cr	18.5 %	18.5 %	
Iron, Fe	72.23 %	72.23 %	As remainder

Component Elements Properties	Metric	English	Comments
Nitrogen, N	0.050 %	0.050 %	

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

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