

Industeel SIRIUS 314 25% Cr - 1.8% Si Heat Resistant Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel , T 300 Series Stainless Steel

Material Notes:

Description: CLI SIRIUS 314 grade is a fully austenitic stainless steel containing 25% Cr, 20% Ni and 1.8% Si. The alloy is designed for high temperature corrosion resistance applications even in severe conditions. Carbon additions are optimized in order to increase creep properties and mechanical properties. The alloy is well designed for applications up to 1150Â°C (2102Â°F) in oxidizing atmospheres, or up to 1050Â°C (2012Â°F) in reducing atmospheres. Sulphur, carbon or nitrogen pick up reduce the behavior of the steel. The alloy performs better than Sirius 310 or Sirius 253 grades in most of the applications. Information provided by manufacturer.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Industeel-SIRIUS-314-25-Cr-18-Si-Heat-Resistant-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	7.90 g/cc	0.285 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	600 MPa	87000 psi	Typical after Solution Annealing
Tensile Strength, Yield	285 MPa	41300 psi	Typical after Solution Annealing
	@Strain 0.200 %	@Strain 0.200 %	
	305 MPa	44200 psi	Typical after Solution Annealing
	@Strain 1.00 %	@Strain 1.00 %	
Elongation at Break	45 %	45 %	Typical
Creep Strength	130 MPa	18900 psi	
	@Temperature 600 Â°C, Time 3.60e+6 sec	@Temperature 1110 Â°F, Time 1000 hour	
Modulus of Elasticity	200 GPa	29000 ksi	
Poissons Ratio	0.333	0.333	Calculated
Shear Modulus	75.0 GPa	10900 ksi	
	@Temperature 20.0 Â°C	@Temperature 68.0 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	
	17.0 Âµm/m-Â°C	9.44 Âµin/in-Â°F	

Thermal Properties	Metric	English	Comments
	@ Temperature 20.0 - 200 Â°C	@ Temperature 68.0 - 392 Â°F	
	18.0 Âµm/m-Â°C	10.0 Âµin/in-Â°F	
	@Temperature 20.0 - 400 Â°C	@Temperature 68.0 - 752 Â°F	
	18.5 Âµm/m-Â°C	10.3 Âµin/in-Â°F	
	@Temperature 20.0 - 600 Â°C	@Temperature 68.0 - 1110 Â°F	
Specific Heat Capacity	0.500 J/g-Â°C	0.120 BTU/lb-Â°F	
	@Temperature 20.0 Â°C	@Temperature 68.0 Â°F	
Thermal Conductivity	14.0 W/m-K	97.2 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 20.0 Â°C	@Temperature 68.0 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.15 %	<= 0.15 %	
Chromium, Cr	25 %	25 %	
Iron, Fe	53.05 - 53.2 %	53.05 - 53.2 %	As remainder
Nickel, Ni	20 %	20 %	
Silicon, Si	1.8 %	1.8 %	

Electrical Properties	Metric	English	Comments
	0.0000950 ohm-cm	0.0000950 ohm-cm	
Electrical Resistivity	@Temperature 20.0 Â°C	@Temperature 68.0 Â°F	

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