

Industeel SIRIUS 800 H+ Heat Resistant Alloy

Category : Metal , Superalloy , Iron Base

Material Notes:

Description: The SIRIUS® 800, H and H+ grades are three variants of a high chromium and nickel austenitic alloy which combines good corrosion and creep resistance. SIRIUS® 800 is employed at temperature below 600°C(1112°F) while SIRIUS® 800H and SIRIUS® 800H+ are used above 600°C (1112°F). CLI heats obtained by vacuum degassing process have a tight control of the chemical analysis including residual elements in order to improve the weldability and in-service properties. Information provided by manufacturer.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Industeel-SIRIUS-800-H-Heat-Resistant-Alloy.php

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

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	>= 450 MPa	>= 65300 psi	Minimum Guaranteed
Tensile Strength, Yield	>= 170 MPa @Strain 0.200 %	>= 24700 psi @Strain 0.200 %	
Elongation at Break	>= 35 %	>= 35 %	
Creep Strength	140 MPa @Temperature 600 Â°C, Time 3.60e+7 sec	20300 psi @Temperature 1110 Â°F, Time 10000 hour	1% elongation
Modulus of Elasticity	196 GPa	28400 ksi	
Poissons Ratio	0.342	0.342	Calculated
Shear Modulus	73.0 GPa @Temperature 20.0 Â°C	10600 ksi @Temperature 68.0 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear	13.5 Âµm/m-Â°C	7.50 Âµin/in-Â°F	
	@Temperature 0.000 - 100 Â°C	@Temperature 32.0 - 212 Â°F	
	14.5 Âµm/m-Â°C	8.06 Âµin/in-Â°F	
	@Temperature 0.000 - 100 Â°C	@Temperature 32.0 - 212 Â°F	
	15.5 Âµm/m-Â°C	8.61 Âµin/in-Â°F	

Thermal Properties	Metric	English	Comments
	@ Temperature 0.000 - 400 Å°C	@ Temperature 32.0 - 752 Å°F	
	17.0 Åµm/m-Å°C	9.44 Åµin/in-Å°F	
	@ Temperature 0.000 - 600 Å°C	@ Temperature 32.0 - 1110 Å°F	
Specific Heat Capacity	0.502 J/g-Å°C	0.120 BTU/lb-Å°F	
	@ Temperature 20.0 Å°C	@ Temperature 68.0 Å°F	
Thermal Conductivity	13.0 W/m-K	90.2 BTU-in/hr-ftÅ²-Å°F	
	@ Temperature 20.0 Å°C	@ Temperature 68.0 Å°F	
Annealing Point	1150 Å°C	2100 Å°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.060 - 0.10 %	0.060 - 0.10 %	
Chromium, Cr	19 - 23 %	19 - 23 %	
Copper, Cu	<= 0.75 %	<= 0.75 %	
Iron, Fe	38.925 - 50.09 %	38.925 - 50.09 %	As remainder
Nickel, Ni	30 - 35 %	30 - 35 %	
Phosphorous, P	<= 0.020 %	<= 0.020 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.0050 %	<= 0.0050 %	
Ti + Al	0.85 - 1.2 %	0.85 - 1.2 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000100 ohm-cm	0.000100 ohm-cm	
	@ Temperature 20.0 Å°C	@ Temperature 68.0 Å°F	

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