Crucible Compaction Metals P/M Low Carbon Astroloy, Supersolvus

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

P/M Low Carbon Astroloy is often the superalloy of choice when applications require greater ductility along with substantial strength levels. When HIP and heat treatment above the solvus temperature, the allow provides excellent high temperature stress rupture life. Applications for this alloy include high pressure turbine discs and containment rings for aircraft auxiliary power units (APU). Thousands of APU high pressure turbine discs made from Crucible Low Carbon Astroloy are in service worldwide on commercial and military airplanes.P/M Low Carbon Astroloy is available as near net shapes and standard mill forms consolidated by HIP or direct extrusion. As-HIP parts can range up to 46 inches (1.2 m) in diameter and weighs up to 16,000 lb (7,200 kg).A balance of high strength and ductility. Supersolvus processing for enhanced creep resistance and stress rupture life.Information provided by Crucible Compaction Metals.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Crucible-Compaction-Metals-PM-Low-Carbon-Astroloy-Supersolvus.php

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	155 MPa @Temperature 760 °C	22500 psi @Temperature 1400 °F	
	185 MPa @Temperature 371 °C	26800 psi @Temperature 700 °F	
	195 MPa @Temperature 10.0 °C	28300 psi @Temperature 50.0 °F	
Tensile Strength, Yield	125 MPa @Strain 0.200 %, Temperature 760 °C	18100 psi @Strain 0.200 %, Temperature 1400 °F	
	130 MPa @Strain 0.200 %, Temperature 371 °C	18900 psi @Strain 0.200 %, Temperature 700 °F	
	135 MPa @Strain 0.200 %, Temperature 10.0 °C	19600 psi @Strain 0.200 %, Temperature 50.0 °F	
Elongation at Break	22 % @Temperature 760 °C	22 % @Temperature 1400 °F	
	22.8 % @Temperature 371 °C	22.8 % @Temperature 700 °F	
	23.1 % @Temperature 10.0 °C	23.1 % @Temperature 50.0 °F	

Mechanical Properties	Metric	English	Comments
Reduction of Area	23.8 %	23.8 %	
	@Temperature 10.0 °C	@Temperature 50.0 °F	
	25.8 %	25.8 %	
	@Temperature 371 °C	@Temperature 700 °F	
	35 %	35 %	
	@Temperature 760 °C	@Temperature 1400 °F	
Rupture Strength	550 MPa	79800 psi	
	@Temperature 732 °C, Time 720000 sec	@Temperature 1350 °F, Time 200 hour	
	620 MPa	89900 psi	
	@Temperature 732 °C, Time 324000 sec	@Temperature 1350 °F, Time 90.0 hour	
	655 MPa	95000 psi	
	@Temperature 732 °C, Time 180000 sec	@Temperature 1350 °F, Time 50.0 hour	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	3.85 - 4.15 %	3.85 - 4.15 %	
Boron, B	0.015 - 0.025 %	0.015 - 0.025 %	
Carbon, C	0.020 - 0.040 %	0.020 - 0.040 %	
Chromium, Cr	14 - 16 %	14 - 16 %	
Cobalt, Co	16 - 18 %	16 - 18 %	
Molybdenum, Mo	4.5 - 5.5 %	4.5 - 5.5 %	
Nickel, Ni	52.6 - 58.3 %	52.6 - 58.3 %	As Balance
Titanium, Ti	3.35 - 3.65 %	3.35 - 3.65 %	

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