

Special Metals UDIMET® alloy 720 Nickel Base Alloy

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

UDIMET® alloy 720 is a nickel base alloy, solid solution strengthened with tungsten and molybdenum and precipitation-hardened with titanium and aluminum. The alloy combines high strength with metallurgical stability as demonstrated by excellent impact strength retention after long exposures at elevated temperatures. Good oxidation and corrosion resistance combined with high strength make the alloy useful in gas turbine blade and disc applications. Information Provided by Special Metals Corporation

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-UDIMET-alloy-720-Nickel-Base-Alloy.php

Physical Properties	Metric	English	Comments
Density	8.08 g/cc	0.292 lb/in ³	

Mechanical Properties	Metric	English	Comments
Rupture Strength	68.0 MPa	9860 psi	
	@Temperature 982 Â°C, Time 3.60e+6 sec	@Temperature 1800 Â°F, Time 1000 hour	
	219 MPa	31800 psi	
	@Temperature 871 Â°C, Time 3.60e+6 sec	@Temperature 1600 Â°F, Time 1000 hour	
	480 MPa	69600 psi	
	@Temperature 760 Â°C, Time 3.60e+6 sec	@Temperature 1400 Â°F, Time 1000 hour	
	500 MPa	72500 psi	
	@Temperature 704 Â°C, Time 3.60e+6 sec	@Temperature 1300 Â°F, Time 1000 hour	
	700 MPa	102000 psi	
	@Temperature 649 Â°C, Time 3.60e+6 sec	@Temperature 1200 Â°F, Time 1000 hour	

Thermal Properties	Metric	English	Comments
CTE, linear	12.24 Âµm/m-Â°C	6.800 Âµin/in-Â°F	
	@Temperature 93.0 Â°C	@Temperature 199 Â°F	
Melting Point	1194 - 1338 Â°C	2181 - 2440 Â°F	

Thermal Properties	Metric	English	Comments
Solubus	1134 Å C	2074 Å F	
Liquidus	1338 Å C	2440 Å F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	2.25 - 2.75 %	2.25 - 2.75 %	
Boron, B	0.010 - 0.020 %	0.010 - 0.020 %	
Carbon, C	0.010 - 0.020 %	0.010 - 0.020 %	
Chromium, Cr	15.5 - 16.5 %	15.5 - 16.5 %	
Cobalt, Co	14 - 15.5 %	14 - 15.5 %	
Molybdenum, Mo	2.75 - 3.25 %	2.75 - 3.25 %	
Nickel, Ni	55.16 - 59.705 %	55.16 - 59.705 %	Balance
Titanium, Ti	4.75 - 5.25 %	4.75 - 5.25 %	
Tungsten, W	1.0 - 1.5 %	1.0 - 1.5 %	
Zirconium, Zr	0.025 - 0.050 %	0.025 - 0.050 %	

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