

PEAK Werkstoff DISPAL S263 Aluminum Alloy, AlSi25Cu3Fe3Ni3MgCoTi, Condition T4

Category : Metal , Nonferrous Metal , Aluminum Alloy

Material Notes:

Excellent properties:abrasive stabilityhigh stiffness (E-modulus)resistance even at high temperaturesgood grindabilityPEAK DISPAL materials allow the manufacturing of pistons for highest operational demands.Property data for Heat Treatment Condition T4 (Quenching in water at RT).Information provided by PEAK Werkstoff GmbH

Order this product through the following link:

http://www.lookpolymers.com/polymer_PEAK-Werkstoff-DISPAL-S263-Aluminum-Alloy-AlSi25Cu3Fe3Ni3MgCoTi-Condition-T4.php

Physical Properties	Metric	English	Comments
Density	2.622 - 2.898 g/cc	0.09473 - 0.1047 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	>= 190	>= 190	HV30
Tensile Strength at Break	>= 464 MPa @Temperature 20.0 °C	>= 67300 psi @Temperature 68.0 °F	
Tensile Strength, Yield	>= 355 MPa @Temperature 20.0 °C	>= 51500 psi @Temperature 68.0 °F	
Elongation at Break	>= 0.60 % @Temperature 20.0 °C	>= 0.60 % @Temperature 68.0 °F	
Modulus of Elasticity	>= 73.0 GPa @Temperature 300 °C	>= 10600 ksi @Temperature 572 °F	Condition T6
	>= 81.0 GPa @Temperature 250 °C	>= 11700 ksi @Temperature 482 °F	Condition T6
	>= 96.0 GPa @Temperature 20.0 °C	>= 13900 ksi @Temperature 68.0 °F	
Poissons Ratio	0.286 @Temperature 20.0 °C	0.286 @Temperature 68.0 °F	Condition F
	0.289 @Temperature 100 °C	0.289 @Temperature 212 °F	Condition F
	0.29 @Temperature 150 °C	0.29 @Temperature 302 °F	Condition F

Mechanical Properties	Metric	English	Comments
	@Temperature 200 °C	@Temperature 392 °F	
	0.294	0.294	Condition F
	@Temperature 300 °C	@Temperature 572 °F	
	0.294	0.294	Condition F
	@Temperature 250 °C	@Temperature 482 °F	
Fatigue Strength	206.5 MPa	29950 psi	P50% rotary bending values for 5X10 ⁷ cycles
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	15.3 - 16.3 μm/m-°C	8.50 - 9.06 μin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	16.1 - 17.1 μm/m-°C	8.94 - 9.50 μin/in-°F	
	@Temperature 20.0 - 200 °C	@Temperature 68.0 - 392 °F	
	17.0 - 18.0 μm/m-°C	9.44 - 10.0 μin/in-°F	
	@Temperature 20.0 - 300 °C	@Temperature 68.0 - 572 °F	
Specific Heat Capacity	0.840 - 0.880 J/g-°C	0.201 - 0.210 BTU/lb-°F	
Thermal Conductivity	95.30 W/m-K	661.4 BTU-in/hr-ft²-°F	
	@Temperature 400 °C	@Temperature 752 °F	
	99.20 W/m-K	688.4 BTU-in/hr-ft²-°F	
	@Temperature 300 °C	@Temperature 572 °F	
	99.20 W/m-K	688.4 BTU-in/hr-ft²-°F	
	@Temperature 200 °C	@Temperature 392 °F	
	99.60 W/m-K	691.2 BTU-in/hr-ft²-°F	
	@Temperature 100 °C	@Temperature 212 °F	
	101.2 W/m-K	702.3 BTU-in/hr-ft²-°F	
	@Temperature 30.0 °C	@Temperature 86.0 °F	
Melting Point	528 - 784 °C	982 - 1440 °F	
Solidus	528.1 - 534.1 °C	982.6 - 993.4 °F	

Liquidus Thermal Properties	784.2 - 790.2 °C Metric	1444 - 1454 °F English	Comments
Component Elements Properties	Metric	English	Comments
Aluminum, Al	63 %	63 %	As Balance
Cobalt, Co	1.0 %	1.0 %	
Copper, Cu	3.0 %	3.0 %	
Iron, Fe	3.0 %	3.0 %	
Magnesium, Mg	1.0 %	1.0 %	
Nickel, Ni	3.0 %	3.0 %	
Silicon, Si	25 %	25 %	
Titanium, Ti	1.0 %	1.0 %	
Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000910 - 0.0000100 ohm-cm	0.00000910 - 0.0000100 ohm-cm	

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