

PEAK Werkstoff DISPAL S232 Aluminum Alloy, AlSi17Fe4Cu3Mg, Condition T6x

Category : Metal , Nonferrous Metal , Aluminum Alloy

Material Notes:

Heat Treatment Condition T6x (Quench in water at RT). Excellent properties:abrasive stabilityhigh stiffness (E-modulus)resistance even at high temperaturesgood grindabilityPEAK DISPAL materials allow the manufacturing of pistons for highest operational demands.Information provided by PEAK Werkstoff GmbH

Order this product through the following link:

http://www.lookpolymers.com/polymer_PEAK-Werkstoff-DISPAL-S232-Aluminum-Alloy-AlSi17Fe4Cu3Mg-Condition-T6x.php

Physical Properties	Metric	English	Comments
Density	2.651 - 2.930 g/cc	0.09576 - 0.1058 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	>= 170	>= 170	HV30
Tensile Strength at Break	>= 314 MPa	>= 45500 psi	
	@Temperature 200 °C	@Temperature 392 °F	
	>= 411 MPa	>= 59600 psi	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 470 MPa	>= 68200 psi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Tensile Strength, Yield	>= 260 MPa	>= 37700 psi	
	@Temperature 260 °C	@Temperature 500 °F	
	>= 362 MPa	>= 52500 psi	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 405 MPa	>= 58700 psi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Elongation at Break	>= 1.0 %	>= 1.0 %	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	>= 1.6 %	>= 1.6 %	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 4.1 %	>= 4.1 %	
	@Temperature 200 °C	@Temperature 392 °F	
Modulus of Elasticity	>= 88.0 GPa	>= 12800 ksi	

Mechanical Properties	Metric	English	Comments
	@Temperature 200 °C	@Temperature 392 °F	
	>= 80.0 GPa	>= 11600 ksi	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 88.0 GPa	>= 12800 ksi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Poissons Ratio	0.332	0.332	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	0.334	0.334	
	@Temperature 100 °C	@Temperature 212 °F	
	0.337	0.337	
	@Temperature 150 °C	@Temperature 302 °F	
	0.339	0.339	
	@Temperature 200 °C	@Temperature 392 °F	
	0.342	0.342	
	@Temperature 250 °C	@Temperature 482 °F	
	0.343	0.343	
	@Temperature 300 °C	@Temperature 572 °F	
Fatigue Strength	225.4 MPa	32690 psi	P50% rotary bending values for 5X10 ⁷ cycles
Shear Modulus	31.0 GPa	4500 ksi	
	@Temperature 250 °C	@Temperature 482 °F	
	31.0 GPa	4500 ksi	
	@Temperature 300 °C	@Temperature 572 °F	
	32.0 GPa	4640 ksi	
	@Temperature 200 °C	@Temperature 392 °F	
	33.0 GPa	4790 ksi	
	@Temperature 150 °C	@Temperature 302 °F	
	34.0 GPa	4930 ksi	
	@Temperature 100 °C	@Temperature 212 °F	
	35.0 GPa	5080 ksi	

Mechanical Properties	@Temperature 20.0 °C Metric	@Temperature 68.0 °F English	Comments
Thermal Properties	Metric	English	Comments
CTE, linear	17.9 - 18.9 $\mu\text{m}/\text{m}\cdot\text{°C}$	9.94 - 10.5 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	18.5 - 19.5 $\mu\text{m}/\text{m}\cdot\text{°C}$	10.3 - 10.8 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 200 °C	@Temperature 68.0 - 392 °F	
	19.3 - 20.3 $\mu\text{m}/\text{m}\cdot\text{°C}$	10.7 - 11.3 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 300 °C	@Temperature 68.0 - 572 °F	
Specific Heat Capacity	0.860 - 0.900 J/g-°C	0.206 - 0.215 BTU/lb-°F	
Thermal Conductivity	116.8 W/m-K	810.6 BTU-in/hr-ft ² -°F	
	@Temperature 30.0 °C	@Temperature 86.0 °F	
	117.9 W/m-K	818.2 BTU-in/hr-ft ² -°F	
	@Temperature 100 °C	@Temperature 212 °F	
	122.1 W/m-K	847.4 BTU-in/hr-ft ² -°F	
	@Temperature 200 °C	@Temperature 392 °F	
	125.7 W/m-K	872.4 BTU-in/hr-ft ² -°F	
	@Temperature 400 °C	@Temperature 752 °F	
	131.7 W/m-K	914.0 BTU-in/hr-ft ² -°F	
	@Temperature 300 °C	@Temperature 572 °F	
Melting Point	516 - 738 °C	961 - 1360 °F	
Solidus	515.9 - 521.9 °C	960.6 - 971.4 °F	
Liquidus	731.5 - 737.5 °C	1349 - 1360 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	75 %	75 %	As Balance
Copper, Cu	3.0 %	3.0 %	
Iron, Fe	4.0 %	4.0 %	
Magnesium, Mg	1.0 %	1.0 %	

Component Elements Properties	Metric	English	Comments
Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000750 - 0.00000810 ohm-cm	0.00000750 - 0.00000810 ohm-cm	

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