

PEAK Werkstoff DISPAL S225 Aluminum Alloy, AlSi35Fe2Ni, Condition F

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.Information provided by PEAK Werkstoff GmbH

Order this product through the following link:

http://www.lookpolymers.com/polymer_PEAK-Werkstoff-DISPAL-S225-Aluminum-Alloy-AlSi35Fe2Ni-Condition-F.php

Physical Properties	Metric	English	Comments
Density	2.451 - 2.709 g/cc	0.08855 - 0.09787 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	85	85	
Tensile Strength at Break	>= 97.0 MPa	>= 14100 psi	
	@Temperature 300 °C	@Temperature 572 °F	
	>= 116 MPa	>= 16800 psi	
	@Temperature 250 °C	@Temperature 482 °F	
	>= 154 MPa	>= 22300 psi	
	@Temperature 200 °C	@Temperature 392 °F	
	>= 180 MPa	>= 26100 psi	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 218 MPa	>= 31600 psi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Tensile Strength, Yield	>= 60.0 MPa	>= 8700 psi	
	@Temperature 300 °C	@Temperature 572 °F	
	>= 71.0 MPa	>= 10300 psi	
	@Temperature 250 °C	@Temperature 482 °F	
	>= 86.0 MPa	>= 12500 psi	
	@Temperature 200 °C	@Temperature 392 °F	
	>= 105 MPa	>= 15200 psi	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 128 MPa	>= 18600 psi	

Mechanical Properties	Metric @Temperature 20.0 °C	English @Temperature 68.0 °F	Comments
Elongation at Break	>= 1.0 %	>= 1.0 %	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	>= 1.9 %	>= 1.9 %	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 2.0 %	>= 2.0 %	
	@Temperature 200 °C	@Temperature 392 °F	
	>= 3.2 %	>= 3.2 %	
	@Temperature 250 °C	@Temperature 482 °F	
	>= 5.9 %	>= 5.9 %	
	@Temperature 300 °C	@Temperature 572 °F	
Modulus of Elasticity	>= 64.0 GPa	>= 9280 ksi	
	@Temperature 300 °C	@Temperature 572 °F	
	>= 65.0 GPa	>= 9430 ksi	
	@Temperature 250 °C	@Temperature 482 °F	
	>= 66.0 GPa	>= 9570 ksi	
	@Temperature 200 °C	@Temperature 392 °F	
	>= 77.0 GPa	>= 11200 ksi	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 86.0 GPa	>= 12500 ksi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Poissons Ratio	0.264	0.264	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	0.267	0.267	
	@Temperature 100 °C	@Temperature 212 °F	
	0.268	0.268	
	@Temperature 150 °C	@Temperature 302 °F	
	0.269	0.269	
	@Temperature 200 °C	@Temperature 392 °F	
	0.27	0.27	
	@Temperature 250 °C	@Temperature 482 °F	

Mechanical Properties	Metric	English	Comments
	@Temperature 300 °C	@Temperature 572 °F	
Shear Modulus	34.0 GPa	4930 ksi	
	@Temperature 300 °C	@Temperature 572 °F	
	36.0 GPa	5220 ksi	
	@Temperature 250 °C	@Temperature 482 °F	
	37.0 GPa	5370 ksi	
	@Temperature 150 °C	@Temperature 302 °F	
	37.0 GPa	5370 ksi	
	@Temperature 200 °C	@Temperature 392 °F	
	38.0 GPa	5510 ksi	
	@Temperature 100 °C	@Temperature 212 °F	
	39.0 GPa	5660 ksi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	14.6 - 15.6 $\mu\text{m}/\text{m}\cdot\text{°C}$	8.11 - 8.67 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	15.5 - 16.5 $\mu\text{m}/\text{m}\cdot\text{°C}$	8.61 - 9.17 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 200 °C	@Temperature 68.0 - 392 °F	
	16.5 - 17.5 $\mu\text{m}/\text{m}\cdot\text{°C}$	9.17 - 9.72 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 300 °C	@Temperature 68.0 - 572 °F	
Thermal Conductivity	103.7 W/m-K	719.7 BTU-in/hr-ft ² -°F	
	@Temperature 400 °C	@Temperature 752 °F	
	110.4 W/m-K	766.2 BTU-in/hr-ft ² -°F	
	@Temperature 300 °C	@Temperature 572 °F	
	115 W/m-K	798 BTU-in/hr-ft ² -°F	
	@Temperature 200 °C	@Temperature 392 °F	
	120 W/m-K	833 BTU-in/hr-ft ² -°F	
	@Temperature 100 °C	@Temperature 212 °F	

Thermal Properties	Metric W/m-K	English BTU-in/hr-ft ² -°F	Comments
	@Temperature 30.0 °C	@Temperature 86.0 °F	
Melting Point	567 - 903 °C	1050 - 1660 °F	
Solidus	567.2 - 573.2 °C	1053 - 1064 °F	
Liquidus	897 - 903 °C	1650 - 1660 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	62 %	62 %	As Balance
Iron, Fe	2.0 %	2.0 %	
Nickel, Ni	1.0 %	1.0 %	
Silicon, Si	35 %	35 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000810 - 0.00000880 ohm-cm	0.00000810 - 0.00000880 ohm-cm	

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