

PEAK Werkstoff DISPAL S220 Aluminum Alloy, AlSi35, 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-S220-Aluminum-Alloy-AlSi35-Condition-F.php

Physical Properties	Metric	English	Comments
Density	2.413 - 2.667 g/cc	0.08718 - 0.09635 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	>= 65	>= 65	HV30
Tensile Strength at Break	>= 128 MPa	>= 18600 psi	
	@Temperature 150 °C	@Temperature 302 °F	
Tensile Strength, Yield	>= 165 MPa	>= 23900 psi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Tensile Strength, Yield	>= 76.0 MPa	>= 11000 psi	
	@Temperature 150 °C	@Temperature 302 °F	
Elongation at Break	>= 95.0 MPa	>= 13800 psi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Elongation at Break	>= 2.5 %	>= 2.5 %	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Modulus of Elasticity	>= 8.4 %	>= 8.4 %	
	@Temperature 150 °C	@Temperature 302 °F	
Modulus of Elasticity	>= 76.0 GPa	>= 11000 ksi	
	@Temperature 150 °C	@Temperature 302 °F	
Poissons Ratio	>= 85.0 GPa	>= 12300 ksi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Poissons Ratio	0.275	0.275	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	0.278	0.278	

Mechanical Properties	Metric	English	Comments
	0.28	0.28	
	@Temperature 100 °C	@Temperature 212 °F	
	0.282	0.282	
	@Temperature 150 °C	@Temperature 302 °F	
	0.282	0.282	
	@Temperature 200 °C	@Temperature 392 °F	
	0.284	0.284	
	@Temperature 250 °C	@Temperature 482 °F	
	0.284	0.284	
	@Temperature 300 °C	@Temperature 572 °F	
Shear Modulus	33.0 GPa	4790 ksi	
	@Temperature 250 °C	@Temperature 482 °F	
	33.0 GPa	4790 ksi	
	@Temperature 300 °C	@Temperature 572 °F	
	34.0 GPa	4930 ksi	
	@Temperature 200 °C	@Temperature 392 °F	
	35.0 GPa	5080 ksi	
	@Temperature 100 °C	@Temperature 212 °F	
	35.0 GPa	5080 ksi	
	@Temperature 150 °C	@Temperature 302 °F	
	36.0 GPa	5220 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	
	16.3 - 17.3 $\mu\text{m}/\text{m}\cdot\text{°C}$	9.06 - 9.61 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 300 °C	@Temperature 68.0 - 572 °F	
Specific Heat Capacity		0.198 - 0.208	

Thermal Properties	Metric	English	Comments
Thermal Conductivity	123.5 W/m-K	857.1 BTU-in/hr-ft ² -°F	
	@Temperature 400 °C	@Temperature 752 °F	
	131 W/m-K	909 BTU-in/hr-ft ² -°F	
	@Temperature 300 °C	@Temperature 572 °F	
	136.8 W/m-K	949.4 BTU-in/hr-ft ² -°F	
	@Temperature 200 °C	@Temperature 392 °F	
	144.3 W/m-K	1001 BTU-in/hr-ft ² -°F	
	@Temperature 100 °C	@Temperature 212 °F	
	152.4 W/m-K	1058 BTU-in/hr-ft ² -°F	
	@Temperature 30.0 °C	@Temperature 86.0 °F	
Melting Point	573 - 881 °C	1060 - 1620 °F	
Solidus	572.9 - 578.9 °C	1063 - 1074 °F	
Liquidus	875.3 - 881.3 °C	1608 - 1618 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	65 %	65 %	As Balance
Silicon, Si	35 %	35 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000620 - 0.00000660 ohm-cm	0.00000620 - 0.00000660 ohm-cm	

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