

PEAK Werkstoff DISPAL S541 Aluminum Alloy, AlMg6Mn4SiTiZr, Condition F

Category : Metal , Nonferrous Metal , Aluminum Alloy

Material Notes:

Information provided by PEAK Werkstoff GmbH

Order this product through the following link:

http://www.lookpolymers.com/polymer_PEAK-Werkstoff-DISPAL-S541-Aluminum-Alloy-AlMg6Mn4SiTiZr-Condition-F.php

Physical Properties	Metric	English	Comments
Density	2.584 - 2.856 g/cc	0.09335 - 0.1032 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	>= 130	>= 130	HV30
Tensile Strength at Break	>= 95.0 MPa	>= 13800 psi	
	@Temperature 300 °C	@Temperature 572 °F	
	>= 161 MPa	>= 23400 psi	
	@Temperature 250 °C	@Temperature 482 °F	
	>= 225 MPa	>= 32600 psi	
	@Temperature 200 °C	@Temperature 392 °F	
	>= 313 MPa	>= 45400 psi	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 411 MPa	>= 59600 psi	
	@Temperature 100 °C	@Temperature 212 °F	
	>= 435 MPa	>= 63100 psi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Tensile Strength, Yield	>= 56.0 MPa	>= 8120 psi	
	@Temperature 300 °C	@Temperature 572 °F	
	>= 114 MPa	>= 16500 psi	
	@Temperature 250 °C	@Temperature 482 °F	
	>= 182 MPa	>= 26400 psi	
	@Temperature 200 °C	@Temperature 392 °F	
	>= 251 MPa	>= 36400 psi	
	@Temperature 150 °C	@Temperature 302 °F	

Mechanical Properties	>= 286 MPa Metric	>= 41500 psi English	Comments
	@Temperature 100 °C	@Temperature 212 °F	
	>= 305 MPa	>= 44200 psi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Elongation at Break	>= 5.7 %	>= 5.7 %	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	>= 8.4 %	>= 8.4 %	
	@Temperature 100 °C	@Temperature 212 °F	
	>= 31.2 %	>= 31.2 %	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 39.4 %	>= 39.4 %	
	@Temperature 200 °C	@Temperature 392 °F	
	>= 45 %	>= 45 %	
	@Temperature 250 °C	@Temperature 482 °F	
	>= 50 %	>= 50 %	
	@Temperature 300 °C	@Temperature 572 °F	
Modulus of Elasticity	>= 41.0 GPa	>= 5950 ksi	
	@Temperature 300 °C	@Temperature 572 °F	
	>= 55.0 GPa	>= 7980 ksi	
	@Temperature 250 °C	@Temperature 482 °F	
	>= 58.0 GPa	>= 8410 ksi	
	@Temperature 200 °C	@Temperature 392 °F	
	>= 64.0 GPa	>= 9280 ksi	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 70.0 GPa	>= 10200 ksi	
	@Temperature 100 °C	@Temperature 212 °F	
	>= 77.0 GPa	>= 11200 ksi	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Poissons Ratio	0.324	0.324	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	0.33	0.33	

Mechanical Properties	Metric	English	Comments
	0.331 @Temperature 100 °C	0.331 @Temperature 212 °F	
	@Temperature 150 °C	@Temperature 302 °F	
	0.333 @Temperature 200 °C	0.333 @Temperature 392 °F	
	@Temperature 300 °C	@Temperature 572 °F	
Fatigue Strength	225.8 MPa	32750 psi	P50% rotary bending values for 5X10 ⁷ cycles
Shear Modulus	24.0 GPa @Temperature 300 °C	3480 ksi @Temperature 572 °F	
	27.0 GPa @Temperature 200 °C	3920 ksi @Temperature 392 °F	
	28.0 GPa @Temperature 150 °C	4060 ksi @Temperature 302 °F	
	29.0 GPa @Temperature 100 °C	4210 ksi @Temperature 212 °F	
	31.0 GPa @Temperature 20.0 °C	4500 ksi @Temperature 68.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	21.8 - 22.8 µm/m-°C @Temperature 20.0 - 100 °C	12.1 - 12.7 µin/in-°F @Temperature 68.0 - 212 °F	
	22.6 - 23.6 µm/m-°C @Temperature 20.0 - 200 °C	12.6 - 13.1 µin/in-°F @Temperature 68.0 - 392 °F	
	23.4 - 24.4 µm/m-°C @Temperature 20.0 - 300 °C	13.0 - 13.6 µin/in-°F @Temperature 68.0 - 572 °F	
Melting Point	570 - 792 °C	1060 - 1460 °F	
Solidus	570.3 - 576.3 °C	1059 - 1069 °F	
Liquidus	785.8 - 791.8 °C	1446 - 1457 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	87 %	87 %	As Balance
Magnesium, Mg	6.0 %	6.0 %	
Manganese, Mn	4.0 %	4.0 %	
Silicon, Si	1.0 %	1.0 %	
Titanium, Ti	1.0 %	1.0 %	
Zirconium, Zr	1.0 %	1.0 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000880 - 0.00000970 ohm-cm	0.00000880 - 0.00000970 ohm-cm	

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