

## PEAK Werkstoff DISPAL S270 Aluminum Alloy, AlSi25Fe4Ni3CuMgMnCrTi, 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.Information provided by PEAK Werkstoff GmbH

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_PEAK-Werkstoff-DISPAL-S270-Aluminum-Alloy-AlSi25Fe4Ni3CuMgMnCrTi-Condition-T4.php](http://www.lookpolymers.com/polymer_PEAK-Werkstoff-DISPAL-S270-Aluminum-Alloy-AlSi25Fe4Ni3CuMgMnCrTi-Condition-T4.php)

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

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	>= 175	>= 175	HV30, Condition T4 (Quenching in water at 80)
	>= 180	>= 180	HV30, Condition T4 (Quenching in water at RT)
Tensile Strength at Break	>= 385 MPa @Temperature 20.0 °C	>= 55800 psi @Temperature 68.0 °F	Condition T4 (Quenching in water at 80C)
	>= 439 MPa @Temperature 20.0 °C	>= 63700 psi @Temperature 68.0 °F	Condition T4 (Quenching in water at RT)
Tensile Strength, Yield	>= 279 MPa @Temperature 20.0 °C	>= 40500 psi @Temperature 68.0 °F	Condition T4 (Quenching in water at 80C)
	>= 335 MPa @Temperature 20.0 °C	>= 48600 psi @Temperature 68.0 °F	Condition T4 (Quenching in water at RT)
Elongation at Break	>= 0.30 % @Temperature 20.0 °C	>= 0.30 % @Temperature 68.0 °F	Condition T4 (Quenching in water at RT)
	>= 0.70 % @Temperature 20.0 °C	>= 0.70 % @Temperature 68.0 °F	Condition T4 (Quenching in water at 80C)
Modulus of Elasticity	>= 96.0 GPa @Temperature 20.0 °C	>= 13900 ksi @Temperature 68.0 °F	Condition T4 (Quenching in water at 80C)
	>= 98.0 GPa @Temperature 20.0 °C	>= 14200 ksi @Temperature 68.0 °F	Condition T4 (Quenching in water at RT)
Poissons Ratio	0.284	0.284	Condition F

Mechanical Properties	Metric @ Temperature 20.0 °C	English @ Temperature 68.0 °F	Comments
	0.286	0.286	Condition F
	@Temperature 100 °C	@Temperature 212 °F	
	0.288	0.288	Condition F
	@Temperature 150 °C	@Temperature 302 °F	
	0.289	0.289	Condition F
	@Temperature 200 °C	@Temperature 392 °F	
	0.291	0.291	Condition F
	@Temperature 250 °C	@Temperature 482 °F	
	0.292	0.292	Condition F
	@Temperature 300 °C	@Temperature 572 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	15.2 - 16.2 $\mu\text{m}/\text{m}\cdot\text{°C}$	8.44 - 9.00 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	15.7 - 16.7 $\mu\text{m}/\text{m}\cdot\text{°C}$	8.72 - 9.28 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@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	0.800 - 0.840 J/g·°C	0.191 - 0.201 BTU/lb·°F	
Thermal Conductivity	89.60 W/m-K	621.8 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 400 °C	@Temperature 752 °F	
	93.70 W/m-K	650.3 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 300 °C	@Temperature 572 °F	
	94.90 W/m-K	658.6 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 200 °C	@Temperature 392 °F	
	96.30 W/m-K	668.3 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 100 °C	@Temperature 212 °F	
	98.40 W/m-K	682.9 BTU-in/hr-ft <sup>2</sup> -°F	

Thermal Properties	@Temperature 30.0 °C Metric	@Temperature 86.0 °F English	Comments
Melting Point	536 - 777 °C	997 - 1430 °F	
Solidus	536.3 - 542.3 °C	997.3 - 1008 °F	
Liquidus	770.9 - 776.9 °C	1420 - 1430 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	63 %	63 %	As Balance
Chromium, Cr	1.0 %	1.0 %	
Copper, Cu	1.0 %	1.0 %	
Iron, Fe	4.0 %	4.0 %	
Magnesium, Mg	1.0 %	1.0 %	
Manganese, Mn	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	0.00000940 - 0.0000104 ohm-cm	0.00000940 - 0.0000104 ohm-cm	

## Contact Songhan Plastic Technology Co.,Ltd.

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