

Overview of materials for Epoxy, High Temperature

Category : Polymer , Thermoset , Epoxy , Epoxy, High Temperature

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Epoxy, Encapsulating, Mineral Filled". Each property range of values reported is minimum and maximum values of appropriate MatWeb entries. The comments report the average value, and number of data points used to calculate the average. The values are not necessarily typical of any specific grade, especially less common values and those that can be most affected by additives or processing methods.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Overview-of-materials-for-Epoxy-High-Temperature.php

Physical Properties	Metric	English	Comments
Density	0.990 - 2.26 g/cc	0.0358 - 0.0816 lb/in ³	Average value: 1.28 g/cc Grade Count:31
Water Absorption	0.200 - 0.200 %	0.200 - 0.200 %	Average value: 0.200 % Grade Count:1
	@Temperature 50.0 - 50.0 °C	@Temperature 122 - 122 °F	
	0.200 - 0.200 %	0.200 - 0.200 %	Average value: 0.200 % Grade Count:1
	@Time 173000 - 173000 sec	@Time 48.0 - 48.0 hour	
Particle Size	20.0 - 45.0 µm	20.0 - 45.0 µm	Average value: 25.0 µm Grade Count:9
Viscosity	30.0 - 1.00e+6 cP	30.0 - 1.00e+6 cP	Average value: 45700 cP Grade Count:45
	150 - 1800 cP	150 - 1800 cP	Average value: 767 cP Grade Count:3
	@Temperature 52.0 - 82.2 °C	@Temperature 126 - 180 °F	
Linear Mold Shrinkage	0.00100 - 0.00350 cm/cm	0.00100 - 0.00350 in/in	Average value: 0.00275 cm/cm Grade Count:5

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	40.0 - 96.0	40.0 - 96.0	Average value: 81.2 Grade Count:34
	20.0 - 27.0	20.0 - 27.0	Average value: 23.0 Grade Count:2
	@Temperature 100 - 177 °C	@Temperature 212 - 350 °F	
Tensile Strength, Ultimate	13.8 - 85.0 MPa	2000 - 12300 psi	Average value: 62.3 MPa Grade Count:11
	>= 13.7895 MPa	>= 2000.00 psi	Average value: 13.8 MPa Grade Count:1
	@Temperature 60.0 - 60.0 °C	@Temperature 140 - 140 °F	

Mechanical Properties	Metric	English	Comments
Elongation at Break	1.00 - 50.0 %	1.00 - 50.0 %	Average value: 8.25 % Grade Count:8
	>= 30.0 %	>= 30.0 %	
	@Temperature 60.0 - 60.0 °C	@Temperature 140 - 140 °F	Average value: 30.0 % Grade Count:1
Modulus of Elasticity	1.68 - 5.40 GPa	244 - 783 ksi	Average value: 3.00 GPa Grade Count:22
	0.827371 - 0.827371 GPa	120.002 - 120.002 ksi	
	@Temperature 60.0 - 60.0 °C	@Temperature 140 - 140 °F	Average value: 0.827 GPa Grade Count:1
Flexural Yield Strength	79.3 - 160 MPa	11500 - 23200 psi	Average value: 104 MPa Grade Count:9
Compressive Yield Strength	55.2 - 256 MPa	8000 - 37100 psi	Average value: 169 MPa Grade Count:8
Shear Strength	4.83 - 46.9 MPa	700 - 6800 psi	Average value: 20.1 MPa Grade Count:23
Adhesive Bond Strength	15.9 - 27.6 MPa	2300 - 4000 psi	Average value: 20.2 MPa Grade Count:4
	6.20528 - 13.7895 MPa	900.002 - 2000.00 psi	
	@Temperature 100 - 175 °C	@Temperature 212 - 347 °F	Average value: 9.42 MPa Grade Count:1
Izod Impact, Notched	0.155 - 0.481 J/cm	0.290 - 0.900 ft-lb/in	Average value: 0.286 J/cm Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	16.2 - 231 µm/m-°C	9.00 - 128 µin/in-°F	Average value: 97.0 µm/m-°C Grade Count:32
	>= 75.0 µm/m-°C	>= 41.7 µin/in-°F	
	@Temperature 60.0 - 60.0 °C	@Temperature 140 - 140 °F	Average value: 75.0 µm/m-°C Grade Count:1
Thermal Conductivity	0.167 - 1.44 W/m-K	1.16 - 10.0 BTU-in/hr-ft²-°F	Average value: 0.838 W/m-K Grade Count:12
Maximum Service Temperature, Air	149 - 350 °C	300 - 662 °F	Average value: 258 °C Grade Count:55
Minimum Service Temperature, Air	-269 - -20.0 °C	-452 - -4.00 °F	Average value: -58.3 °C Grade Count:47
Glass Transition Temp, Tg	30.0 - 220 °C	86.0 - 428 °F	Average value: 108 °C Grade Count:22
Decomposition Temperature	341 - 487 °C	646 - 909 °F	Average value: 405 °C Grade Count:17

Optical Properties	Metric	English	Comments
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Optical Properties	Metric 1.62	English 52	Comments 1.57 Grade Count:9
Transmission, Visible	0.100 - 99.0 %	0.100 - 99.0 %	Average value: 77.4 % Grade Count:11

Electrical Properties	Metric	English	Comments
Electrical Resistivity	400 - 1.00e+16 ohm-cm	400 - 1.00e+16 ohm-cm	Average value: 1.31e+15 ohm-cm Grade Count:29
Dielectric Constant	2.58 - 5.20	2.58 - 5.20	Average value: 3.68 Grade Count:29
Dielectric Strength	14.7 - 18.9 kV/mm	373 - 480 kV/in	Average value: 16.9 kV/mm Grade Count:9
Dissipation Factor	0.000700 - 0.0140	0.000700 - 0.0140	Average value: 0.00635 Grade Count:22

Processing Properties	Metric	English	Comments
Processing Temperature	10.0 - 177 °C	50.0 - 350 °F	Average value: 73.0 °C Grade Count:3
Cure Time	30.0 - 4320 min	0.500 - 72.0 hour	Average value: 854 min Grade Count:23
	1.00 - 480 min	0.0167 - 8.00 hour	Average value: 71.3 min Grade Count:32
	@Temperature 71.1 - 204 °C	@Temperature 160 - 400 °F	
Pot Life	8.00 - 7200 min	8.00 - 7200 min	Average value: 670 min Grade Count:33
	120 - 120 min	120 - 120 min	Average value: 120 min Grade Count:1
	@Temperature 80.0 - 80.0 °C	@Temperature 176 - 176 °F	

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