

Overview of materials for Epoxy, Cast, Unreinforced

Category : Polymer , Thermoset , Epoxy , Epoxy, Cast, Unreinforced

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Epoxy, Cast, Unreinforced". 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-Cast-Unreinforced.php

Physical Properties	Metric	English	Comments
Density	0.490 - 1.80 g/cc	0.0177 - 0.0649 lb/in ³	Average value: 1.14 g/cc Grade Count:26
Water Absorption	0.100 - 10.0 %	0.100 - 10.0 %	Average value: 0.911 % Grade Count:22
Viscosity	10.0 - 180000 cP	10.0 - 180000 cP	Average value: 20300 cP Grade Count:52
	46.0 - 1800 cP @Temperature 52.0 - 100 °C	46.0 - 1800 cP @Temperature 126 - 212 °F	Average value: 717 cP Grade Count:9
Linear Mold Shrinkage	0.00100 cm/cm	0.00100 in/in	Average value: 0.00100 cm/cm Grade Count:3

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	85.0 - 121	85.0 - 121	Average value: 100 Grade Count:6
Hardness, Shore D	6.00 - 90.0	6.00 - 90.0	Average value: 62.9 Grade Count:44
	>= 70.0 @Temperature 120 - 120 °C	>= 70.0 @Temperature 248 - 248 °F	Average value: 72.4 Grade Count:6
	60.0 - 85.0 @Temperature 100 - 100 °C	60.0 - 85.0 @Temperature 212 - 212 °F	Average value: 72.4 Grade Count:7
	60.0 - 85.0 @Time 10800 - 10800 sec	60.0 - 85.0 @Time 3.00 - 3.00 hour	Average value: 72.4 Grade Count:7
Tensile Strength, Ultimate	7.58 - 96.5 MPa	1100 - 14000 psi	Average value: 48.2 MPa Grade Count:56
Elongation at Break	0.700 - 400 %	0.700 - 400 %	Average value: 25.4 % Grade Count:46

Mechanical Properties	Metric	English	Comments
	10.0 GPa	150 ksi	Average value: 3.74 GPa Grade Count:17
Flexural Yield Strength	13.8 - 131 MPa	2000 - 19000 psi	Average value: 75.1 MPa Grade Count:28
Flexural Modulus	0.0138 - 3.79 GPa	2.00 - 550 ksi	Average value: 2.59 GPa Grade Count:10
Compressive Yield Strength	13.8 - 279 MPa	2000 - 40500 psi	Average value: 109 MPa Grade Count:32
Shear Strength	7.58 - 17.2 MPa	1100 - 2500 psi	Average value: 13.2 MPa Grade Count:3
Adhesive Bond Strength	6.89 - 19.3 MPa	1000 - 2800 psi	Average value: 13.1 MPa Grade Count:6
Izod Impact, Notched	0.246 - 1.13 J/cm	0.460 - 2.12 ft-lb/in	Average value: 0.430 J/cm Grade Count:9

Thermal Properties	Metric	English	Comments
CTE, linear	12.0 - 90.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	6.67 - 50.0 $\mu\text{in}/\text{in}\cdot\text{°F}$	Average value: 44.3 $\mu\text{m}/\text{m}\cdot\text{°C}$ Grade Count:14
Thermal Conductivity	0.167 - 0.795 W/m-K	1.16 - 5.52 BTU-in/hr-ft ² -°F	Average value: 0.480 W/m-K Grade Count:20
Maximum Service Temperature, Air	20.0 - 300 °C	68.0 - 572 °F	Average value: 121 °C Grade Count:59
Minimum Service Temperature, Air	-269 - -46.1 °C	-452 - -51.0 °F	Average value: -94.4 °C Grade Count:12

Optical Properties	Metric	English	Comments
Transmission, Visible	90.0 %	90.0 %	Average value: 90.0 % Grade Count:11

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 - 9.00e+16 ohm-cm	1.00e+12 - 9.00e+16 ohm-cm	Average value: 6.80e+15 ohm-cm Grade Count:35
	1.00e+8 - 1.00e+15 ohm-cm	1.00e+8 - 1.00e+15 ohm-cm	Average value: 7.80e+13 ohm-cm Grade Count:7
	@Temperature 66.0 - 130 °C	@Temperature 151 - 266 °F	
Surface Resistance	7.38e+11 - 7.85e+15 ohm	7.38e+11 - 7.85e+15 ohm	Average value: 3.41e+15 ohm Grade Count:6
Dielectric Constant	2.79 - 4.50	2.79 - 4.50	Average value: 3.52 Grade Count:30
	2.66 - 5.60	2.66 - 5.60	Average value: 4.06 Grade Count:12
	@Temperature 100 - 150 °C	@Temperature 212 - 302 °F	

Electrical Properties	2.68 - 5.60 Metric	2.68 - 5.60 English	Comments
	@Frequency 60.0 - 1000 Hz	@Frequency 60.0 - 1000 Hz	Average value: 4.85 Grade Count:12
Dielectric Strength	11.8 - 21.7 kV/mm	300 - 550 kV/in	Average value: 16.3 kV/mm Grade Count:24
Dissipation Factor	0.00500 - 0.0550	0.00500 - 0.0550	Average value: 0.0219 Grade Count:19
	0.00700 - 0.142	0.00700 - 0.142	Average value: 0.0580 Grade Count:11
	@Temperature 100 - 150 °C	@Temperature 212 - 302 °F	
	0.00700 - 0.142	0.00700 - 0.142	Average value: 0.0580 Grade Count:11
	@Frequency 60.0 - 60.0 Hz	@Frequency 60.0 - 60.0 Hz	
Arc Resistance	150 sec	150 sec	Average value: 150 sec Grade Count:6

Processing Properties	Metric	English	Comments
Cure Time	1.00 - 30200 min	0.0167 - 504 hour	Average value: 3380 min Grade Count:18
	20.0 - 3600 min	0.333 - 60.0 hour	Average value: 198 min Grade Count:40
	@Temperature 50.0 - 204 °C	@Temperature 122 - 400 °F	
Pot Life	2.50 - 4320 min	2.50 - 4320 min	Average value: 373 min Grade Count:65
	16.0 - 420 min	16.0 - 420 min	Average value: 93.8 min Grade Count:20
	@Temperature 60.0 - 100 °C	@Temperature 140 - 212 °F	

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