

Overview of materials for Epoxy Adhesive

Category : Polymer , Adhesive , Thermoset , Epoxy , Epoxy Adhesive

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	0.190 - 4.80 g/cc	0.00686 - 0.173 lb/in³	Average value: 1.49 g/cc Grade Count:273
	0.620 - 0.620 g/cc @Temperature 50.0 - 50.0 °C	0.0224 - 0.0224 lb/in³ @Temperature 122 - 122 °F	Average value: 0.620 g/cc Grade Count:1
Volatile Organic Compounds (VOC) Content	0.000 - 336 g/l	0.000 - 336 g/l	Average value: 115 g/l Grade Count:13
Water Absorption	0.00400 - 4.65 %	0.00400 - 4.65 %	Average value: 0.662 % Grade Count:60
Particle Size	20.0 - 50.0 µm	20.0 - 50.0 µm	Average value: 32.0 µm Grade Count:5
Viscosity	7.35 - 2.50e+7 cP	7.35 - 2.50e+7 cP	Average value: 151000 cP Grade Count:450
	1000 - 130000 cP @Temperature 40.0 - 105 °C	1000 - 130000 cP @Temperature 104 - 221 °F	Average value: 19400 cP Grade Count:7
Linear Mold Shrinkage	0.000300 - 0.0100 cm/cm	0.000300 - 0.0100 in/in	Average value: 0.00539 cm/cm Grade Count:11
Outgassing - Total Mass Loss	0.000 - 1.74 %	0.000 - 1.74 %	Average value: 0.551 % Grade Count:18
	0.0200 - 0.600 % @Temperature 65.0 - 65.0 °C	0.0200 - 0.600 % @Temperature 149 - 149 °F	Average value: 0.310 % Grade Count:1
	0.0200 - 0.600 % @Time 10800 - 10800 sec	0.0200 - 0.600 % @Time 3.00 - 3.00 hour	Average value: 0.310 % Grade Count:1

Mechanical Properties	Metric	English	Comments
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Hardness, Shore A Mechanical Properties	43.0 - 95.0 Metric	43.0 - 95.0 English	Average value: 62.0 Grade Count:7 Comments
Hardness, Shore D	12.0 - 95.0	12.0 - 95.0	Average value: 76.6 Grade Count:341
	70.0 - 75.0	70.0 - 75.0	Average value: 81.6 Grade Count:2
	@Temperature -5.56 - 149 °C	@Temperature 22.0 - 300 °F	
	86.0 - 90.0	86.0 - 90.0	Average value: 81.6 Grade Count:2
	@Temperature 65.0 - 65.0 °C	@Temperature 149 - 149 °F	
	86.0 - 90.0	86.0 - 90.0	Average value: 81.6 Grade Count:2
	@Time 3600 - 14400 sec	@Time 1.00 - 4.00 hour	
Tensile Strength, Ultimate	0.276 - 2180 MPa	40.0 - 316000 psi	Average value: 58.3 MPa Grade Count:245
	0.861845 - 64.8107 MPa	125.000 - 9400.02 psi	Average value: 9.14 MPa Grade Count:19
	@Temperature -59.0 - 204 °C	@Temperature -74.2 - 399 °F	
Tensile Strength, Yield	1.38 - 40.0 MPa	200 - 5800 psi	Average value: 14.8 MPa Grade Count:50
	4.55054 - 8.99766 MPa	660.001 - 1305.00 psi	Average value: 6.30 MPa Grade Count:7
	@Temperature -55.0 - 177 °C	@Temperature -67.0 - 350 °F	
Elongation at Break	0.000 - 200 %	0.000 - 200 %	Average value: 17.7 % Grade Count:155
	0.730 - 1.78 %	0.730 - 1.78 %	Average value: 1.21 % Grade Count:1
	@Temperature 65.6 - 177 °C	@Temperature 150 - 350 °F	
Elongation at Yield	4.00 - 10.0 %	4.00 - 10.0 %	Average value: 7.40 % Grade Count:5
Modulus of Elasticity	0.0296 - 127 GPa	4.30 - 18400 ksi	Average value: 8.61 GPa Grade Count:129
	1.73058 - 9.65266 GPa	251.004 - 1400.02 ksi	Average value: 4.39 GPa Grade Count:3
	@Temperature 65.6 - 177 °C	@Temperature 150 - 350 °F	
Flexural Yield Strength	0.552 - 2210 MPa	80.0 - 320000 psi	Average value: 221 MPa Grade Count:40
	41.3685 - 999.74 MPa	6000.01 - 145000 psi	Average value: 301 MPa Grade Count:2
	@Temperature 65.6 - 177 °C	@Temperature 150 - 350 °F	
			Average value: 42.4 GPa Grade

Flexural Modulus Mechanical Properties	1.45 - 115 GPa Metric	210 - 16700 ksi English	Count:7 Comments
	3.93001 - 113 GPa @Temperature 65.6 - 177 °C	570.009 - 16400 ksi @Temperature 150 - 350 °F	Average value: 32.8 GPa Grade Count:2
Compressive Yield Strength	3.45 - 8000 MPa	500 - 1.16e+6 psi	Average value: 253 MPa Grade Count:130
	9.9974 - 6500 MPa @Temperature 60.0 - 177 °C	1450.0 - 943000 psi @Temperature 140 - 351 °F	Average value: 1030 MPa Grade Count:6
Compressive Modulus	0.0414 - 200 GPa	6.00 - 29000 ksi	Average value: 17.9 GPa Grade Count:49
	115 - 115 GPa @Temperature 70.0 - 70.0 °C	16700 - 16700 ksi @Temperature 158 - 158 °F	Average value: 115 GPa Grade Count:1
Poissons Ratio	0.0200 - 0.680	0.0200 - 0.680	Average value: 0.188 Grade Count:6
Shear Modulus	0.342 - 5.18 GPa	49.6 - 751 ksi	Average value: 2.60 GPa Grade Count:7
	1.50857 - 2.74411 GPa @Temperature -100 - 0.000 °C	218.803 - 398.006 ksi @Temperature -148 - 32.0 °F	Average value: 2.10 GPa Grade Count:3
Shear Strength	0.00689 - 172 MPa	1.00 - 25000 psi	Average value: 20.5 MPa Grade Count:255
	0.151685 - 248.211 MPa @Temperature -253 - 316 °C	22.0000 - 36000.1 psi @Temperature -423 - 601 °F	Average value: 17.4 MPa Grade Count:123
	1.37895 - 29.6475 MPa @Temperature -55.0 - 260 °C	200.000 - 4300.01 psi @Temperature -67.0 - 500 °F	Average value: 17.4 MPa Grade Count:15
	1.37895 - 29.6475 MPa @Time 0.000 - 4.41e+6 sec	200.000 - 4300.01 psi @Time 0.000 - 1220 hour	Average value: 17.4 MPa Grade Count:15
Adhesive Bond Strength	0.621 - 65.5 MPa	90.0 - 9500 psi	Average value: 19.7 MPa Grade Count:258
	3.50 - 48.3 MPa @Temperature -55.0 - 260 °C	508 - 7010 psi @Temperature -67.0 - 500 °F	Average value: 17.0 MPa Grade Count:77
	1.17211 - 27.579 MPa @Temperature 65.0 -	170.000 - 4000.0 psi @Temperature 149 -	Average value: 17.0 MPa Grade Count:3

Mechanical Properties	65.0 °C Metric	149 °F English	Comments
	1.17211 - 27.579 MPa @Time 3600 - 14400 sec	170.000 - 4000.0 psi @Time 1.00 - 4.00 hour	Average value: 17.0 MPa Grade Count:3
Izod Impact, Notched	0.107 - 2.14 J/cm	0.200 - 4.00 ft-lb/in	Average value: 0.596 J/cm Grade Count:13
Gardner Impact	11.0 - 36.2 J	8.11 - 26.7 ft-lb	Average value: 21.7 J Grade Count:5
Coefficient of Friction	1.30 - 2.73	1.30 - 2.73	Average value: 1.61 Grade Count:5
Peel Strength	0.175 - 14.4 kN/m	1.00 - 82.0 pli	Average value: 4.88 kN/m Grade Count:144
	0.1753 - 19.283 kN/m @Temperature -55.0 - 177 °C	1.000 - 110.03 pli @Temperature -67.0 - 351 °F	Average value: 4.76 kN/m Grade Count:26
	0.120957 - 2.78727 kN/m @Temperature 82.0 - 260 °C	0.690181 - 15.9042 pli @Temperature 180 - 500 °F	Average value: 4.76 kN/m Grade Count:3
	0.120957 - 2.78727 kN/m @Time 14400 - 1.80e+6 sec	0.690181 - 15.9042 pli @Time 4.00 - 500 hour	Average value: 4.76 kN/m Grade Count:3

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