

Overview of materials for Polyether Block Amide (PEBA)

Category : Polymer , Thermoplastic , Polyether Block Amide (PEBA)

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyether Block Amide (PEBA)". 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-Polyether-Block-Amide-PEBA.php

Physical Properties	Metric	English	Comments
Density	0.960 - 11.0 g/cc	0.0347 - 0.397 lb/in ³	Average value: 1.26 g/cc Grade Count:92
Water Absorption	0.700 - 48.0 %	0.700 - 48.0 %	Average value: 5.72 % Grade Count:60
Moisture Absorption at Equilibrium	0.300 - 4.50 %	0.300 - 4.50 %	Average value: 0.996 % Grade Count:55
Water Absorption at Saturation	0.400 - 1.50 %	0.400 - 1.50 %	Average value: 0.800 % Grade Count:15
Water Vapor Transmission	2200 - 25000 g/m ² /day	142 - 1610 g/100 in ² /day	Average value: 10200 g/m ² /day Grade Count:3
	@Temperature 38.0 - 38.0 °C	@Temperature 100 - 100 °F	
	2200 - 25000 g/m ² /day	142 - 1610 g/100 in ² /day	Average value: 10200 g/m ² /day Grade Count:3
	@Thickness 0.0150 - 0.0150 mm	@Thickness 0.000591 - 0.000591 in	
Viscosity Test	190 cm ³ /g	190 cm ³ /g	Average value: 190 cm ³ /g Grade Count:5
Linear Mold Shrinkage	0.00200 - 0.0150 cm/cm	0.00200 - 0.0150 in/in	Average value: 0.00826 cm/cm Grade Count:36
Linear Mold Shrinkage, Transverse	0.00600 - 0.0150 cm/cm	0.00600 - 0.0150 in/in	Average value: 0.0115 cm/cm Grade Count:33
Melt Flow	4.00 - 20.2 g/10 min	4.00 - 20.2 g/10 min	Average value: 9.28 g/10 min Grade Count:35

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	72.0 - 83.0	72.0 - 83.0	Average value: 75.4 Grade Count:5
Hardness, Shore D	22.0 - 72.0	22.0 - 72.0	Average value: 49.1 Grade Count:84
	9.00 - 62.0 MPa	1310 - 8990 psi	Average value: 41.4 MPa Grade

Tensile Strength, Ultimate Mechanical Properties	Metric	English	Count:56 Comments
Tensile Strength, Yield	1.80 - 34.0 MPa	261 - 4930 psi	Average value: 14.0 MPa Grade Count:39
Elongation at Break	1.00 - 1000 %	1.00 - 1000 %	Average value: 392 % Grade Count:73
Elongation at Yield	15.0 - 36.0 %	15.0 - 36.0 %	Average value: 25.1 % Grade Count:18
Modulus of Elasticity	0.00400 - 4.03 GPa	0.580 - 585 ksi	Average value: 0.331 GPa Grade Count:40
Flexural Modulus	0.0120 - 2.69 GPa	1.74 - 390 ksi	Average value: 0.233 GPa Grade Count:56
Resilience	0.560 - 0.750	0.560 - 0.750	Average value: 0.644 Grade Count:5
Flex Crack Resistance	2.00 - 14.0	2.00 - 14.0	Average value: 4.65 Grade Count:5
Izod Impact, Notched	0.530 J/cm - NB	0.993 ft-lb/in - NB	Average value: 1.32 J/cm Grade Count:13
	0.500 J/cm - NB @Temperature -40.0 - - 40.0 °C	0.937 ft-lb/in - NB @Temperature -40.0 - - 40.0 °F	Average value: 0.750 J/cm Grade Count:8
Izod Impact, Unnotched	NB	NB	Grade Count:7
	NB - NB @Temperature -40.0 - - 40.0 °C	NB - NB @Temperature -40.0 - - 40.0 °F	Grade Count:7
Charpy Impact Unnotched	1000 J/cm² - NB	4760 ft-lb/in² - NB	Grade Count:56
	999.9 J/cm² - NB @Temperature -30.0 - - 30.0 °C	4759 ft-lb/in² - NB @Temperature -22.0 - - 22.0 °F	Grade Count:40
Charpy Impact, Notched	1.50 J/cm² - NB	7.14 ft-lb/in² - NB	Average value: 6.99 J/cm² Grade Count:56
	0.550 J/cm² - NB @Temperature -30.0 - - 30.0 °C	2.62 ft-lb/in² - NB @Temperature -22.0 - - 22.0 °F	Average value: 1.35 J/cm² Grade Count:48
Tensile Creep Modulus, 1000 hours	60.0 - 200 MPa	8700 - 29000 psi	Average value: 113 MPa Grade Count:4
Tear Strength	38.0 - 168 kN/m	217 - 959 pli	Average value: 91.5 kN/m Grade Count:6
Taber Abrasion, mg/1000 Cycles	46.0 - 94.0	46.0 - 94.0	Average value: 71.2 Grade Count:5
Compression Set	5.00 - 62.0 %	5.00 - 62.0 %	Average value: 30.4 % Grade Count:5

Thermal Properties	Metric	English	Comments
CTE, linear	100 - 240 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	55.6 - 133 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	Average value: 182 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ Grade Count:26
CTE, linear, Transverse to Flow	100 - 210 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	55.6 - 117 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	Average value: 169 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ Grade Count:7
Melting Point	134 - 204 $^{\circ}\text{C}$	272 - 399 $^{\circ}\text{F}$	Average value: 161 $^{\circ}\text{C}$ Grade Count:80
Deflection Temperature at 0.46 MPa (66 psi)	42.0 - 106 $^{\circ}\text{C}$	108 - 223 $^{\circ}\text{F}$	Average value: 72.4 $^{\circ}\text{C}$ Grade Count:25
Deflection Temperature at 1.8 MPa (264 psi)	45.0 $^{\circ}\text{C}$	113 $^{\circ}\text{F}$	Average value: 45.0 $^{\circ}\text{C}$ Grade Count:6
Vicat Softening Point	58.0 - 175 $^{\circ}\text{C}$	136 - 347 $^{\circ}\text{F}$	Average value: 128 $^{\circ}\text{C}$ Grade Count:60
Glass Transition Temp, Tg	-65.0 - -50.0 $^{\circ}\text{C}$	-85.0 - -58.0 $^{\circ}\text{F}$	Average value: -58.6 $^{\circ}\text{C}$ Grade Count:7
Flammability, UL94	HB	HB	Grade Count:28
Oxygen Index	19.4 - 22.9 %	19.4 - 22.9 %	Average value: 20.8 % Grade Count:6

Optical Properties	Metric	English	Comments
Refractive Index	1.50 - 1.51	1.50 - 1.51	Average value: 1.50 Grade Count:8
Transmission, Visible	80.0 - 90.0 %	80.0 - 90.0 %	Average value: 80.9 % Grade Count:22

Component Elements Properties	Metric	English	Comments
Carbon, C	28.0 - 97.0 %	28.0 - 97.0 %	Average value: 67.2 % Grade Count:6

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1000 - 1.00e+17 ohm-cm	1000 - 1.00e+17 ohm-cm	Average value: 3.58e+15 ohm-cm Grade Count:28
Surface Resistance	0.200 - 1.00e+17 ohm	0.200 - 1.00e+17 ohm	Average value: 2.24e+15 ohm Grade Count:45
Static Decay	1.00 sec	1.00 sec	Average value: 1.00 sec Grade Count:4
Dielectric Constant	4.00 - 9.50	4.00 - 9.50	Average value: 6.31 Grade Count:7
Dielectric Strength	5.00 - 44.5 kV/mm	127 - 1130 kV/in	Average value: 36.1 kV/mm Grade Count:18
Dissipation Factor	0.000370 - 0.150	0.000370 - 0.150	Average value: 0.0465 Grade Count:17
Comparative Tracking Index	600 V	600 V	Average value: 600 V Grade Count:15

Processing Properties	Metric	English	Comments
Processing Temperature	190 - 290 °C	374 - 554 °F	Average value: 223 °C Grade Count:25
Nozzle Temperature	180 - 290 °C	356 - 554 °F	Average value: 238 °C Grade Count:34
Melt Temperature	180 - 271 °C	356 - 520 °F	Average value: 231 °C Grade Count:4
Mold Temperature	10.0 - 82.2 °C	50.0 - 180 °F	Average value: 32.8 °C Grade Count:34
Drying Temperature	55.0 - 80.0 °C	131 - 176 °F	Average value: 67.9 °C Grade Count:38

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