

Overview of materials for Polyether Ester Elastomer

Category : Polymer , Thermoplastic , Elastomer, TPE , Polyester, TP , Polyether Ester Elastomer

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyether Ester Elastomer". 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-Ester-Elastomer.php

Physical Properties	Metric	English	Comments
Density	1.05 - 1.48 g/cc	0.0379 - 0.0535 lb/in ³	Average value: 1.21 g/cc Grade Count:99
Water Absorption	0.450 - 7.00 %	0.450 - 7.00 %	Average value: 0.993 % Grade Count:57
Moisture Absorption at Equilibrium	0.150 - 0.580 %	0.150 - 0.580 %	Average value: 0.311 % Grade Count:29
Linear Mold Shrinkage	0.00200 - 0.0213 cm/cm	0.00200 - 0.0213 in/in	Average value: 0.0139 cm/cm Grade Count:39
Melt Flow	0.300 - 58.0 g/10 min	0.300 - 58.0 g/10 min	Average value: 13.3 g/10 min Grade Count:92

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	70.0 - 99.0	70.0 - 99.0	Average value: 90.3 Grade Count:4
Hardness, Shore D	20.0 - 80.0	20.0 - 80.0	Average value: 50.4 Grade Count:93
Tensile Strength, Ultimate	7.00 - 57.0 MPa	1020 - 8270 psi	Average value: 27.1 MPa Grade Count:69
Tensile Strength, Yield	1.18 - 35.0 MPa	171 - 5080 psi	Average value: 13.1 MPa Grade Count:65
Elongation at Break	8.50 - 840 %	8.50 - 840 %	Average value: 313 % Grade Count:92
Elongation at Yield	10.0 - 74.0 %	10.0 - 74.0 %	Average value: 31.7 % Grade Count:15
Modulus of Elasticity	0.0500 - 3.07 GPa	7.25 - 445 ksi	Average value: 0.460 GPa Grade Count:35
Tenacity	0.0120 - 0.0250 N/tex	0.136 - 0.283 g/denier	Average value: 0.0187 N/tex Grade Count:10
Flexural Yield Strength	2.26 - 79.0 MPa	327 - 11500 psi	Average value: 20.1 MPa Grade Count:31
Flexural Modulus	0.0150 - 3.09 GPa	2.18 - 448 ksi	Average value: 0.408 GPa Grade Count:63

Mechanical Properties	Metric	English	Comments
	1.5 - 0.0350 GPa	5.08 ksi	Value: 0.0138 GPa Grade Count:4
Resilience	44.0 - 78.0	44.0 - 78.0	Average value: 62.0 Grade Count:4
Izod Impact, Notched	0.686 J/cm - NB	1.29 ft-lb/in - NB	Average value: 2.14 J/cm Grade Count:22
	0.490332 - 980.567 J/cm @Temperature -40.0 - - 40.0 °C	0.918594 - 1837.00 ft-lb/in @Temperature -40.0 - - 40.0 °F	Average value: 1.22 J/cm Grade Count:16
	0.490332 - 980.567 J/cm @Thickness 3.17 - 3.17 mm	0.918594 - 1837.00 ft-lb/in @Thickness 0.125 - 0.125 in	Average value: 1.22 J/cm Grade Count:16
Izod Impact, Unnotched	12.5 J/cm - NB	23.4 ft-lb/in - NB	Average value: 12.5 J/cm Grade Count:3
	1.1768 - 980.567 J/cm @Temperature -40.0 - - 23.0 °C	2.2046 - 1837.00 ft-lb/in @Temperature -40.0 - - 9.40 °F	Average value: 3.85 J/cm Grade Count:18
Izod Impact, Notched (ISO)	9.00 kJ/m² - NB	4.28 ft-lb/in² - NB	Average value: 25.4 kJ/m² Grade Count:27
	5.00 kJ/m² - NB @Temperature -40.0 - - 20.0 °C	2.38 ft-lb/in² - NB @Temperature -40.0 - - 4.00 °F	Average value: 6.50 kJ/m² Grade Count:13
Charpy Impact Unnotched	0.600 J/cm² - NB @Temperature -30.0 - - 30.0 °C	2.86 ft-lb/in² - NB @Temperature -22.0 - - 22.0 °F	Average value: 0.600 J/cm² Grade Count:3
Charpy Impact, Notched	1.00 J/cm² - NB	4.76 ft-lb/in² - NB	Average value: 2.90 J/cm² Grade Count:32
	0.600 J/cm² - NB @Temperature -30.0 - - 30.0 °C	2.86 ft-lb/in² - NB @Temperature -22.0 - - 22.0 °F	Average value: 1.27 J/cm² Grade Count:31
Tensile Impact Strength	179 - 233 kJ/m²	85.2 - 111 ft-lb/in²	Average value: 204 kJ/m² Grade Count:7
Tear Strength	40.0 - 280 kN/m	228 - 1600 pli	Average value: 126 kN/m Grade Count:30
Graves Tear Strength	60.0 - 150 kN/m	342 - 856 pli	Average value: 92.5 kN/m Grade Count:6
Taber Abrasion, mg/1000 Cycles	0.140 - 56.0	0.140 - 56.0	Average value: 29.2 Grade Count:20
Compression Set	50.0 - 60.0 %	50.0 - 60.0 %	Average value: 55.0 % Grade Count:3

Mechanical Properties	Metric	English	Comments
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Thermal Properties	Metric	English	Comments
CTE, linear	45.0 - 220 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	25.0 - 122 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	Average value: 143 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ Grade Count:24
CTE, linear, Transverse to Flow	110 - 220 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	61.1 - 122 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	Average value: 154 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ Grade Count:17
Melting Point	156 - 224 $^{\circ}\text{C}$	313 - 435 $^{\circ}\text{F}$	Average value: 203 $^{\circ}\text{C}$ Grade Count:93
Deflection Temperature at 0.46 MPa (66 psi)	46.0 - 187 $^{\circ}\text{C}$	115 - 369 $^{\circ}\text{F}$	Average value: 91.5 $^{\circ}\text{C}$ Grade Count:42
Deflection Temperature at 1.8 MPa (264 psi)	47.0 - 170 $^{\circ}\text{C}$	117 - 338 $^{\circ}\text{F}$	Average value: 101 $^{\circ}\text{C}$ Grade Count:7
Vicat Softening Point	50.0 - 210 $^{\circ}\text{C}$	122 - 410 $^{\circ}\text{F}$	Average value: 145 $^{\circ}\text{C}$ Grade Count:55
Brittleness Temperature	-70.0 - -40.0 $^{\circ}\text{C}$	-94.0 - -40.0 $^{\circ}\text{F}$	Average value: -61.3 $^{\circ}\text{C}$ Grade Count:30
Glass Transition Temp, Tg	-78.0 - -60.0 $^{\circ}\text{C}$	-108 - -76.0 $^{\circ}\text{F}$	Average value: -70.0 $^{\circ}\text{C}$ Grade Count:4
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:26

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 - 1.00e+15 ohm-cm	1.00e+12 - 1.00e+15 ohm-cm	Average value: 3.52e+14 ohm-cm Grade Count:19
Surface Resistance	8.00e+10 - 1.00e+15 ohm	8.00e+10 - 1.00e+15 ohm	Average value: 3.39e+14 ohm Grade Count:14
Dielectric Constant	3.30 - 20.0	3.30 - 20.0	Average value: 4.84 Grade Count:15
Dielectric Strength	20.0 - 30.0 kV/mm	508 - 762 kV/in	Average value: 22.1 kV/mm Grade Count:19
Dissipation Factor	0.00100 - 0.0810	0.00100 - 0.0810	Average value: 0.0345 Grade Count:15
Comparative Tracking Index	600 V	600 V	Average value: 600 V Grade Count:19

Processing Properties	Metric	English	Comments
Nozzle Temperature	180 - 220 $^{\circ}\text{C}$	356 - 428 $^{\circ}\text{F}$	Average value: 200 $^{\circ}\text{C}$ Grade Count:18
Die Temperature	190 - 220 $^{\circ}\text{C}$	374 - 428 $^{\circ}\text{F}$	Average value: 205 $^{\circ}\text{C}$ Grade Count:18
Melt Temperature	170 - 230 $^{\circ}\text{C}$	338 - 446 $^{\circ}\text{F}$	Average value: 202 $^{\circ}\text{C}$ Grade Count:18
Drying Temperature	80.0 - 100 $^{\circ}\text{C}$	176 - 212 $^{\circ}\text{F}$	Average value: 97.5 $^{\circ}\text{C}$ Grade Count:18

Processing Properties	Metric	English	Comments
Injection Pressure	5.90 - 7.90 MPa	856 - 1150 psi	Average value: 6.90 MPa Grade Count:18
Cycle Time - Injection	1.20 - 1.50 sec	1.20 - 1.50 sec	Average value: 1.35 sec Grade Count:18
Cycle Time - Cooling	10.0 - 20.0 sec	10.0 - 20.0 sec	Average value: 15.0 sec Grade Count:18

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