

## Overview of materials for Polyethylene Terephthalate (PET), 50% Glass Reinforced

Category : Polymer , Thermoplastic , Polyester, TP , Polyethylene Terephthalate (PET) , Polyethylene Terephthalate (PET), 50% Glass Reinforced

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyethylene Terephthalate (PET), 50% Glass Reinforced". Specific grades with glass content between 45% and 54% are included. 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-Polyethylene-Terephthalate-PET-50-Glass-Reinforced.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Polyethylene-Terephthalate-PET-50-Glass-Reinforced.php)

Physical Properties	Metric	English	Comments
Density	1.44 - 1.88 g/cc	0.0520 - 0.0679 lb/in <sup>3</sup>	Average value: 1.71 g/cc Grade Count:25
Water Absorption	0.0350 - 0.620 %	0.0350 - 0.620 %	Average value: 0.196 % Grade Count:10
Moisture Absorption at Equilibrium	0.120 - 0.210 %	0.120 - 0.210 %	Average value: 0.157 % Grade Count:8
Viscosity	15000 - 300000 cP	15000 - 300000 cP	Average value: 133000 cP Grade Count:2
	@Temperature 270 - 315 °C	@Temperature 518 - 599 °F	
	15000 - 300000 cP	15000 - 300000 cP	Average value: 133000 cP Grade Count:2
	@Shear Rate 1000 - 100000 1/s	@Shear Rate 1000 - 100000 1/s	
Linear Mold Shrinkage	0.00100 - 0.00600 cm/cm	0.00100 - 0.00600 in/in	Average value: 0.00280 cm/cm Grade Count:22
Linear Mold Shrinkage, Transverse	0.00500 - 0.0100 cm/cm	0.00500 - 0.0100 in/in	Average value: 0.00768 cm/cm Grade Count:11

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	100 - 125	100 - 125	Average value: 118 Grade Count:5
Hardness, Rockwell R	116 - 121	116 - 121	Average value: 119 Grade Count:7
Tensile Strength, Ultimate	137 - 210 MPa	19900 - 30500 psi	Average value: 177 MPa Grade Count:16
Tensile Strength, Yield	0.866 - 195 MPa	126 - 28300 psi	Average value: 138 MPa Grade Count:9
Elongation at Break	1.00 - 6.00 %	1.00 - 6.00 %	Average value: 2.36 % Grade Count:20

Modulus of Elasticity Mechanical Properties	15.9 - 19.0 GPa Metric	2250 - 2760 ksi English	Average value: 17.0 GPa Grade Count:11
Flexural Yield Strength	177 - 300 MPa	25600 - 43500 psi	Average value: 258 MPa Grade Count:15
	110 - 370 MPa @Temperature -40.0 - 120 °C	16000 - 53700 psi @Temperature -40.0 - 248 °F	Average value: 240 MPa Grade Count:1
Flexural Modulus	9.32 - 17.0 GPa	1350 - 2470 ksi	Average value: 13.3 GPa Grade Count:18
	4.69 - 4.69 GPa @Temperature 120 - 120 °C	680 - 680 ksi @Temperature 248 - 248 °F	Average value: 4.69 GPa Grade Count:1
Shear Modulus	>= 0.122 GPa @Temperature -50.0 - 250 °C	>= 17.7 ksi @Temperature -58.0 - 482 °F	Average value: 1.40 GPa Grade Count:1
Izod Impact, Notched	0.694 - 1.15 J/cm	1.30 - 2.15 ft-lb/in	Average value: 0.943 J/cm Grade Count:16
Izod Impact, Unnotched	0.932 - 9.60 J/cm	1.75 - 18.0 ft-lb/in	Average value: 6.00 J/cm Grade Count:3
Izod Impact, Notched (ISO)	9.50 - 13.0 kJ/m <sup>2</sup>	4.52 - 6.19 ft-lb/in <sup>2</sup>	Average value: 10.7 kJ/m <sup>2</sup> Grade Count:5
	9.00 - 9.00 kJ/m <sup>2</sup> @Temperature -30.0 - - 30.0 °C	4.28 - 4.28 ft-lb/in <sup>2</sup> @Temperature -22.0 - - 22.0 °F	Average value: 9.00 kJ/m <sup>2</sup> Grade Count:2
Charpy Impact Unnotched	2.40 - 6.50 J/cm <sup>2</sup>	11.4 - 30.9 ft-lb/in <sup>2</sup>	Average value: 5.20 J/cm <sup>2</sup> Grade Count:7
	2.10 - 6.50 J/cm <sup>2</sup> @Temperature -30.0 - - 30.0 °C	9.99 - 30.9 ft-lb/in <sup>2</sup> @Temperature -22.0 - - 22.0 °F	Average value: 4.62 J/cm <sup>2</sup> Grade Count:6
Charpy Impact, Notched	0.900 - 1.40 J/cm <sup>2</sup>	4.28 - 6.66 ft-lb/in <sup>2</sup>	Average value: 1.11 J/cm <sup>2</sup> Grade Count:8
	0.900 - 1.40 J/cm <sup>2</sup> @Temperature -30.0 - - 30.0 °C	4.28 - 6.66 ft-lb/in <sup>2</sup> @Temperature -22.0 - - 22.0 °F	Average value: 1.08 J/cm <sup>2</sup> Grade Count:6

Thermal Properties	Metric	English	Comments
CTE, linear	14.0 - 30.0 µm/m-°C	7.78 - 16.7 µin/in-°F	Average value: 20.3 µm/m-°C Grade Count:11
CTE, linear, Transverse to Flow	35.0 - 100 µm/m-°C	19.4 - 55.6 µin/in-°F	Average value: 68.7 µm/m-°C Grade Count:7
Melting Point			Average value: 250 °C Grade Count:15

Thermal Properties	244 - 255 °C Metric	471 - 491 °F English	Comments
Deflection Temperature at 0.46 MPa (66 psi)	226 - 255 °C	439 - 491 °F	Average value: 245 °C Grade Count:14
Deflection Temperature at 1.8 MPa (264 psi)	204 - 240 °C	400 - 464 °F	Average value: 227 °C Grade Count:22
Flammability, UL94	HB - 5VA	HB - 5VA	Grade Count:20
Oxygen Index	20.0 - 26.0 %	20.0 - 26.0 %	Average value: 22.7 % Grade Count:3

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+13 - 1.00e+16 ohm-cm	1.00e+13 - 1.00e+16 ohm-cm	Average value: 5.77e+15 ohm-cm Grade Count:12
Surface Resistance	1.00e+14 - 1.00e+15 ohm	1.00e+14 - 1.00e+15 ohm	Average value: 2.50e+14 ohm Grade Count:6
Dielectric Constant	3.40 - 5.20	3.40 - 5.20	Average value: 3.92 Grade Count:11
Dielectric Strength	17.7 - 35.0 kV/mm	450 - 889 kV/in	Average value: 23.9 kV/mm Grade Count:9
Dissipation Factor	0.00200 - 0.220	0.00200 - 0.220	Average value: 0.0226 Grade Count:9
Arc Resistance	120 - 129 sec	120 - 129 sec	Average value: 125 sec Grade Count:3
Comparative Tracking Index	175 - 400 V	175 - 400 V	Average value: 247 V Grade Count:7

Processing Properties	Metric	English	Comments
Processing Temperature	110 - 300 °C	230 - 572 °F	Average value: 237 °C Grade Count:5
Melt Temperature	20.0 - 300 °C	68.0 - 572 °F	Average value: 262 °C Grade Count:8
Mold Temperature	80.0 - 149 °C	176 - 300 °F	Average value: 117 °C Grade Count:11
Drying Temperature	120 - 140 °C	248 - 284 °F	Average value: 128 °C Grade Count:8
Moisture Content	0.0100 - 0.0800 %	0.0100 - 0.0800 %	Average value: 0.0329 % Grade Count:7

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