

Overview of materials for Polyethylene Terephthalate (PET), 20% Glass Reinforced

Category : Polymer , Thermoplastic , Polyester, TP , Polyethylene Terephthalate (PET) , Polyethylene Terephthalate (PET), 20% Glass Reinforced

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyethylene Terephthalate (PET), 20% Glass Reinforced". Specific grades with glass content between 15% and 24% 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-20-Glass-Reinforced.php

Physical Properties	Metric	English	Comments
Density	1.38 - 1.63 g/cc	0.0499 - 0.0589 lb/in ³	Average value: 1.48 g/cc Grade Count:39
Filler Content	13.0 - 20.0 %	13.0 - 20.0 %	Average value: 16.7 % Grade Count:6
Water Absorption	0.0500 - 2.50 %	0.0500 - 2.50 %	Average value: 0.326 % Grade Count:14
Moisture Absorption at Equilibrium	0.100 - 0.250 %	0.100 - 0.250 %	Average value: 0.204 % Grade Count:12
Linear Mold Shrinkage	0.00150 - 0.0120 cm/cm	0.00150 - 0.0120 in/in	Average value: 0.00433 cm/cm Grade Count:33
Linear Mold Shrinkage, Transverse	0.00100 - 0.0120 cm/cm	0.00100 - 0.0120 in/in	Average value: 0.00879 cm/cm Grade Count:13
Ash	15.0 - 83.0 %	15.0 - 83.0 %	Average value: 37.7 % Grade Count:3

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	58.0 - 123	58.0 - 123	Average value: 105 Grade Count:4
Hardness, Rockwell R	110 - 120	110 - 120	Average value: 115 Grade Count:10
Tensile Strength, Ultimate	75.0 - 150 MPa	10900 - 21800 psi	Average value: 102 MPa Grade Count:29
Tensile Strength, Yield	1.06 - 115 MPa	154 - 16700 psi	Average value: 63.1 MPa Grade Count:10
Elongation at Break	1.50 - 6.00 %	1.50 - 6.00 %	Average value: 3.09 % Grade Count:33
Modulus of Elasticity	4.50 - 8.50 GPa	653 - 1230 ksi	Average value: 6.81 GPa Grade Count:19
Flexural Yield Strength	6.89 - 178 MPa	1000 - 25900 psi	Average value: 132 MPa Grade Count:25

Mechanical Properties	Metric	English	Comments
	1.10 GPa	170 ksi	Average value: 5.52 GPa Grade Count:29
Shear Modulus	>= 0.0390 GPa @Temperature -50.0 - 250 °C	>= 5.66 ksi @Temperature -58.0 - 482 °F	Average value: 0.630 GPa Grade Count:1
Izod Impact, Notched	0.340 - 1.33 J/cm	0.637 - 2.50 ft-lb/in	Average value: 0.705 J/cm Grade Count:22
Izod Impact, Unnotched	2.67 - 4.27 J/cm	5.00 - 8.00 ft-lb/in	Average value: 3.42 J/cm Grade Count:5
Izod Impact, Notched (ISO)	4.50 - 13.0 kJ/m²	2.14 - 6.19 ft-lb/in²	Average value: 7.57 kJ/m² Grade Count:16
	5.00 - 8.00 kJ/m² @Temperature -40.0 - - 30.0 °C	2.38 - 3.81 ft-lb/in² @Temperature -40.0 - - 22.0 °F	Average value: 6.09 kJ/m² Grade Count:8
Izod Impact, Unnotched (ISO)	25.0 - 35.0 kJ/m² @Temperature -30.0 - - 30.0 °C	11.9 - 16.7 ft-lb/in² @Temperature -22.0 - - 22.0 °F	Average value: 30.0 kJ/m² Grade Count:2
Charpy Impact Unnotched	2.00 - 5.50 J/cm²	9.52 - 26.2 ft-lb/in²	Average value: 3.92 J/cm² Grade Count:6
	1.50 - 2.50 J/cm² @Temperature -30.0 - 5.00 °C	7.14 - 11.9 ft-lb/in² @Temperature -22.0 - 41.0 °F	Average value: 2.00 J/cm² Grade Count:3
Charpy Impact, Notched	0.470 - 1.10 J/cm²	2.24 - 5.24 ft-lb/in²	Average value: 0.769 J/cm² Grade Count:9
	0.500 - 0.800 J/cm² @Temperature -40.0 - - 30.0 °C	2.38 - 3.81 ft-lb/in² @Temperature -40.0 - - 22.0 °F	Average value: 0.653 J/cm² Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	12.6 - 98.0 µm/m-°C	7.00 - 54.4 µin/in-°F	Average value: 41.5 µm/m-°C Grade Count:12
	109 - 109 µm/m-°C @Temperature 55.0 - 160 °C	60.6 - 60.6 µin/in-°F @Temperature 131 - 320 °F	Average value: 109 µm/m-°C Grade Count:1
CTE, linear, Transverse to Flow	40.0 - 120 µm/m-°C	22.2 - 66.7 µin/in-°F	Average value: 80.8 µm/m-°C Grade Count:4
	32.0 - 32.0 µm/m-°C @Temperature 55.0 - 160 °C	17.8 - 17.8 µin/in-°F @Temperature 131 - 320 °F	Average value: 32.0 µm/m-°C Grade Count:1
Melting Point	225 - 260 °C	437 - 500 °F	Average value: 247 °C Grade Count:22

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (66 psi)	220 - 250 °C	428 - 482 °F	Average value: 238 °C Grade Count:21
Deflection Temperature at 1.8 MPa (264 psi)	180 - 233 °C	356 - 451 °F	Average value: 205 °C Grade Count:35
Vicat Softening Point	205 - 255 °C	401 - 491 °F	Average value: 232 °C Grade Count:3
Flammability, UL94	HB - 5VA	HB - 5VA	Grade Count:29
Oxygen Index	19.0 - 24.0 %	19.0 - 24.0 %	Average value: 21.0 % Grade Count:3
Glow Wire Test	750 - 960 °C	1380 - 1760 °F	Average value: 915 °C Grade Count:4

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+13 - 1.00e+18 ohm-cm	1.00e+13 - 1.00e+18 ohm-cm	Average value: 6.01e+16 ohm-cm Grade Count:19
Surface Resistance	1.00e+13 - 1.00e+15 ohm	1.00e+13 - 1.00e+15 ohm	Average value: 1.90e+14 ohm Grade Count:9
Dielectric Constant	3.30 - 4.60	3.30 - 4.60	Average value: 3.76 Grade Count:6
Dielectric Strength	16.1 - 37.0 kV/mm	410 - 940 kV/in	Average value: 23.3 kV/mm Grade Count:12
Dissipation Factor	0.00300 - 0.0200	0.00300 - 0.0200	Average value: 0.0130 Grade Count:3
Comparative Tracking Index	0.000 - 400 V	0.000 - 400 V	Average value: 243 V Grade Count:8

Processing Properties	Metric	English	Comments
Processing Temperature	135 - 293 °C	275 - 560 °F	Average value: 263 °C Grade Count:12
Nozzle Temperature	271 - 300 °C	520 - 572 °F	Average value: 286 °C Grade Count:4
Melt Temperature	20.0 - 300 °C	68.0 - 572 °F	Average value: 270 °C Grade Count:13
Mold Temperature	75.0 - 163 °C	167 - 325 °F	Average value: 112 °C Grade Count:22
Drying Temperature	116 - 140 °C	240 - 284 °F	Average value: 127 °C Grade Count:13
Moisture Content	0.0100 - 0.200 %	0.0100 - 0.200 %	Average value: 0.0746 % Grade Count:13
Injection Pressure	55.0 - 138 MPa	7980 - 20000 psi	Average value: 84.0 MPa Grade Count:7

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