

Overview of materials for Polyethylene Terephthalate (PET), Glass Fiber Filled, Flame Retardant

Category : Polymer , Thermoplastic , Polyester, TP , Polyethylene Terephthalate (PET) , Polyethylene Terephthalate (PET), Glass Fiber Filled, Flame Retardant

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyethylene Terephthalate (PET), Glass Fiber Filled, Flame Retardant". 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-Glass-Fiber-Filled-Flame-Retardant.php

Physical Properties	Metric	English	Comments
Density	1.49 - 1.83 g/cc	0.0538 - 0.0661 lb/in ³	Average value: 1.64 g/cc Grade Count:36
Water Absorption	0.0500 - 0.750 %	0.0500 - 0.750 %	Average value: 0.168 % Grade Count:16
Linear Mold Shrinkage	0.00100 - 0.0110 cm/cm	0.00100 - 0.0110 in/in	Average value: 0.00326 cm/cm Grade Count:35
Linear Mold Shrinkage, Transverse	0.00300 - 0.0115 cm/cm	0.00300 - 0.0115 in/in	Average value: 0.00829 cm/cm Grade Count:18
Melt Flow	3.00 - 45.0 g/10 min	3.00 - 45.0 g/10 min	Average value: 13.8 g/10 min Grade Count:6

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	88.0 - 95.0	88.0 - 95.0	Average value: 93.0 Grade Count:8
Hardness, Rockwell R	111 - 120	111 - 120	Average value: 118 Grade Count:12
Tensile Strength, Ultimate	66.3 - 172 MPa	9620 - 24900 psi	Average value: 125 MPa Grade Count:31
	50.0 - 170 MPa	7250 - 24700 psi	Average value: 83.0 MPa Grade Count:2
	@Temperature -40.0 - 120 °C	@Temperature -40.0 - 248 °F	
	6.65 - 167.5 MPa	965 - 24290 psi	Average value: 83.0 MPa Grade Count:1
	@Temperature -20.0 - 150 °C	@Temperature -4.00 - 302 °F	
	6.65 - 167.5 MPa	965 - 24290 psi	Average value: 83.0 MPa Grade Count:1
	@Strain 0.190 - 7.09 %	@Strain 0.190 - 7.09 %	
	110 - 157 MPa	16000 - 22800 psi	Average value: 139 MPa Grade

Tensile Strength, Yield Mechanical Properties	Metric	English	Count:5 Comments
Elongation at Break	0.500 - 6.00 %	0.500 - 6.00 %	Average value: 2.34 % Grade Count:34
	1.70 - 5.70 %	1.70 - 5.70 %	
	@Temperature -40.0 - 120 °C	@Temperature -40.0 - 248 °F	Average value: 3.92 % Grade Count:2
Modulus of Elasticity	6.14 - 14.6 GPa	890 - 2120 ksi	Average value: 10.4 GPa Grade Count:14
	3.013 - 12.5 GPa	437.0 - 1810 ksi	
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	Average value: 6.79 GPa Grade Count:2
Flexural Yield Strength	120 - 278 MPa	17400 - 40300 psi	Average value: 190 MPa Grade Count:28
	85.0 - 275 MPa	12300 - 39900 psi	
	@Temperature -40.0 - 120 °C	@Temperature -40.0 - 248 °F	Average value: 180 MPa Grade Count:1
Flexural Modulus	5.52 - 16.0 GPa	800 - 2320 ksi	Average value: 9.57 GPa Grade Count:34
	2.97 - 2.97 GPa	431 - 431 ksi	
	@Temperature 120 - 120 °C	@Temperature 248 - 248 °F	Average value: 2.97 GPa Grade Count:1
Compressive Yield Strength	98.0 - 128 MPa	14200 - 18600 psi	Average value: 110 MPa Grade Count:5
Shear Modulus	0.141 - 2.432 GPa	20.5 - 352.7 ksi	Average value: 1.13 GPa Grade Count:2
	@Temperature -50.0 - 250 °C	@Temperature -58.0 - 482 °F	
Secant Modulus	4.65654 - 8.95349 GPa	675.385 - 1298.61 ksi	Average value: 7.36 GPa Grade Count:1
	@Temperature -20.0 - 40.0 °C	@Temperature -4.00 - 104 °F	
	4.65654 - 8.95349 GPa	675.385 - 1298.61 ksi	Average value: 7.36 GPa Grade Count:1
	@Strain 0.520 - 2.83 %	@Strain 0.520 - 2.83 %	
Izod Impact, Notched	0.587 - 1.60 J/cm	1.10 - 3.00 ft-lb/in	Average value: 0.891 J/cm Grade Count:25
	0.800 - 0.800 J/cm	1.50 - 1.50 ft-lb/in	
	@Temperature -40.0 - - 40.0 °C	@Temperature -40.0 - - 40.0 °F	Average value: 0.800 J/cm Grade Count:1
Izod Impact, Unnotched	0.834 - 8.70 J/cm	1.56 - 16.3 ft-lb/in	Average value: 3.24 J/cm Grade Count:6
	11.5 - 11.5 kJ/m²	5.47 - 5.47 ft-lb/in²	Average value: 11.5 kJ/m² Grade

Izod Impact, Notched (ISO) Mechanical Properties	Metric @Temperature -40.0 - - 40.0 °C	English @Temperature -40.0 - - 40.0 °F	Count:1 Comments
Charpy Impact Unnotched	3.00 - 4.00 J/cm ²	14.3 - 19.0 ft-lb/in ²	Average value: 3.72 J/cm ² Grade Count:8
	2.00 - 4.00 J/cm ² @Temperature -40.0 - - 30.0 °C	9.52 - 19.0 ft-lb/in ² @Temperature -40.0 - - 22.0 °F	Average value: 3.07 J/cm ² Grade Count:6
Charpy Impact, Notched	0.620 - 1.15 J/cm ²	2.95 - 5.47 ft-lb/in ²	Average value: 0.919 J/cm ² Grade Count:9
	0.600 - 1.40 J/cm ² @Temperature -40.0 - - 30.0 °C	2.86 - 6.66 ft-lb/in ² @Temperature -40.0 - - 22.0 °F	Average value: 0.850 J/cm ² Grade Count:7
Taber Abrasion, mg/1000 Cycles	25.0 - 36.0	25.0 - 36.0	Average value: 30.6 Grade Count:5

Thermal Properties	Metric	English	Comments
CTE, linear	14.0 - 33.0 µm/m-°C	7.78 - 18.3 µin/in-°F	Average value: 23.2 µm/m-°C Grade Count:11
	12.0 - 19.0 µm/m-°C @Temperature 55.0 - 160 °C	6.67 - 10.6 µin/in-°F @Temperature 131 - 320 °F	Average value: 15.5 µm/m-°C Grade Count:2
CTE, linear, Transverse to Flow	68.0 - 95.0 µm/m-°C	37.8 - 52.8 µin/in-°F	Average value: 81.1 µm/m-°C Grade Count:6
	105 - 125 µm/m-°C @Temperature 55.0 - 160 °C	58.3 - 69.4 µin/in-°F @Temperature 131 - 320 °F	Average value: 115 µm/m-°C Grade Count:2
Melting Point	245 - 255 °C	473 - 491 °F	Average value: 251 °C Grade Count:25
Deflection Temperature at 0.46 MPa (66 psi)	230 - 245 °C	446 - 473 °F	Average value: 241 °C Grade Count:21
Deflection Temperature at 1.8 MPa (264 psi)	195 - 232 °C	383 - 450 °F	Average value: 217 °C Grade Count:32
Vicat Softening Point	210 - 220 °C	410 - 428 °F	Average value: 217 °C Grade Count:3
UL RTI, Electrical	130 - 155 °C	266 - 311 °F	Average value: 145 °C Grade Count:9
Flammability, UL94	V-2 - 5VA	V-2 - 5VA	Grade Count:33
Oxygen Index	32.0 - 36.0 %	32.0 - 36.0 %	Average value: 33.3 % Grade Count:5

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: 5.20e+16 ohm-cm Grade Count:22

Electrical Properties	Metric	English	Comments
Surface Resistance	2.52e+13 - 1.00e+15 ohm	2.52e+13 - 1.00e+15 ohm	Value: 2.62e+14 ohm Grade Count:5
Dielectric Constant	3.60 - 4.80	3.60 - 4.80	Average value: 4.02 Grade Count:11
Dielectric Strength	20.0 - 40.0 kV/mm	508 - 1020 kV/in	Average value: 27.0 kV/mm Grade Count:18
Dissipation Factor	0.00700 - 0.0200	0.00700 - 0.0200	Average value: 0.0139 Grade Count:8
Arc Resistance	80.0 - 85.0 sec	80.0 - 85.0 sec	Average value: 82.3 sec Grade Count:7
Comparative Tracking Index	0.000 - 400 V	0.000 - 400 V	Average value: 223 V Grade Count:16

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