

Overview of materials for Polyethylene Terephthalate (PET), 30% Glass Reinforced

Category : Polymer , Thermoplastic , Polyester, TP , Polyethylene Terephthalate (PET) , Polyethylene Terephthalate (PET), 30% Glass Reinforced

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyethylene Terephthalate (PET), 30% Glass Reinforced". Specific grades with glass content between 25% and 34% 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-30-Glass-Reinforced.php

Physical Properties	Metric	English	Comments
Density	1.32 - 1.75 g/cc	0.0477 - 0.0632 lb/in ³	Average value: 1.59 g/cc Grade Count:68
Filler Content	30.0 %	30.0 %	Average value: 30.0 % Grade Count:9
Water Absorption	0.0400 - 0.700 %	0.0400 - 0.700 %	Average value: 0.160 % Grade Count:23
Moisture Absorption at Equilibrium	0.0500 - 0.240 %	0.0500 - 0.240 %	Average value: 0.169 % Grade Count:19
Viscosity	110000 - 4.11e+6 cP	110000 - 4.11e+6 cP	Average value: 999000 cP Grade Count:3
	@Temperature 275 - 305 °C	@Temperature 527 - 581 °F	
	110000 - 4.11e+6 cP	110000 - 4.11e+6 cP	Average value: 999000 cP Grade Count:3
	@Shear Rate 7.30 - 3090 1/s	@Shear Rate 7.30 - 3090 1/s	
Linear Mold Shrinkage	0.00100 - 0.0110 cm/cm	0.00100 - 0.0110 in/in	Average value: 0.00334 cm/cm Grade Count:62
Linear Mold Shrinkage, Transverse	0.00300 - 0.0105 cm/cm	0.00300 - 0.0105 in/in	Average value: 0.00811 cm/cm Grade Count:30
Melt Flow	5.00 - 65.0 g/10 min	5.00 - 65.0 g/10 min	Average value: 16.8 g/10 min Grade Count:6
Ash	30.0 - 84.0 %	30.0 - 84.0 %	Average value: 49.7 % Grade Count:3

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	70.0 - 123	70.0 - 123	Average value: 99.4 Grade Count:12
Hardness, Rockwell R	115 - 122	115 - 122	Average value: 119 Grade Count:21

Tensile Strength, Ultimate Mechanical Properties	67.6 - 170 MPa Metric	9800 - 24700 psi English	Average value: 141 MPa Grade Count:59
	54.0 - 211 MPa	7830 - 30600 psi	Average value: 78.5 MPa Grade Count:5
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
	20.5 - 184 MPa	2970 - 26700 psi	Average value: 78.5 MPa Grade Count:1
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
	20.5 - 184 MPa	2970 - 26700 psi	Average value: 78.5 MPa Grade Count:1
	@Strain 0.230 - 10.5 %	@Strain 0.230 - 10.5 %	
Tensile Strength, Yield	0.971 - 162 MPa	141 - 23500 psi	Average value: 118 MPa Grade Count:15
Elongation at Break	1.50 - 6.60 %	1.50 - 6.60 %	Average value: 2.64 % Grade Count:59
	2.10 - 11.0 %	2.10 - 11.0 %	Average value: 5.39 % Grade Count:4
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
Modulus of Elasticity	4.27 - 13.5 GPa	620 - 1960 ksi	Average value: 10.5 GPa Grade Count:33
	2.70 - 11.2 GPa	392 - 1620 ksi	Average value: 6.24 GPa Grade Count:4
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
Flexural Yield Strength	90.0 - 270 MPa	13100 - 39200 psi	Average value: 206 MPa Grade Count:49
	60.0 - 276 MPa	8700 - 40000 psi	Average value: 150 MPa Grade Count:3
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
Flexural Modulus	3.65 - 11.4 GPa	530 - 1650 ksi	Average value: 9.18 GPa Grade Count:50
	2.25 - 9.66 GPa	326 - 1400 ksi	Average value: 4.77 GPa Grade Count:3
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
Compressive Yield Strength	148 - 241 MPa	21500 - 35000 psi	Average value: 193 MPa Grade Count:5
Shear Modulus	>= 0.144 GPa	>= 20.9 ksi	Average value: 1.18 GPa Grade Count:1
	@Temperature -50.0 - 250 °C	@Temperature -58.0 - 482 °F	
Izod Impact, Notched	0.490 - 1.82 J/cm	0.919 - 3.40 ft-lb/in	Average value: 0.880 J/cm Grade Count:45
	0.850 - 1.01 J/cm	1.59 - 1.89 ft-lb/in	

Mechanical Properties	Metric	English	Comments
	@Temperature -40.0 - - 40.0 °C	@Temperature -40.0 - - 40.0 °F	Average value: 0.930 J/cm Grade Count:2
Izod Impact, Unnotched	0.883 - 9.60 J/cm	1.65 - 18.0 ft-lb/in	Average value: 5.64 J/cm Grade Count:10
	6.40 - 9.60 J/cm	12.0 - 18.0 ft-lb/in	Average value: 8.00 J/cm Grade Count:2
	@Temperature -40.0 - - 40.0 °C	@Temperature -40.0 - - 40.0 °F	
Izod Impact, Notched (ISO)	7.00 - 18.0 kJ/m ²	3.33 - 8.57 ft-lb/in ²	Average value: 9.87 kJ/m ² Grade Count:22
	6.00 - 9.00 kJ/m ²	2.86 - 4.28 ft-lb/in ²	Average value: 7.55 kJ/m ² Grade Count:11
	@Temperature -40.0 - - 30.0 °C	@Temperature -40.0 - - 22.0 °F	
Izod Impact, Unnotched (ISO)	30.0 - 55.0 kJ/m ²	14.3 - 26.2 ft-lb/in ²	Average value: 39.4 kJ/m ² Grade Count:9
	25.0 - 45.0 kJ/m ²	11.9 - 21.4 ft-lb/in ²	Average value: 34.4 kJ/m ² Grade Count:8
	@Temperature -40.0 - - 30.0 °C	@Temperature -40.0 - - 22.0 °F	
Charpy Impact Unnotched	2.70 - 7.00 J/cm ²	12.8 - 33.3 ft-lb/in ²	Average value: 4.88 J/cm ² Grade Count:13
	2.80 - 8.60 J/cm ²	13.3 - 40.9 ft-lb/in ²	Average value: 4.50 J/cm ² Grade Count:8
	@Temperature -40.0 - - 30.0 °C	@Temperature -40.0 - - 22.0 °F	
Charpy Impact, Notched	0.850 - 1.60 J/cm ²	4.05 - 7.61 ft-lb/in ²	Average value: 1.06 J/cm ² Grade Count:14
	0.800 - 1.20 J/cm ²	3.81 - 5.71 ft-lb/in ²	Average value: 0.945 J/cm ² Grade Count:9
	@Temperature -40.0 - - 30.0 °C	@Temperature -40.0 - - 22.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	10.0 - 500 µm/m-°C	5.56 - 278 µin/in-°F	Average value: 153 µm/m-°C Grade Count:22
	4.00 - 500 µm/m-°C	2.22 - 278 µin/in-°F	Average value: 376 µm/m-°C Grade Count:3
	@Temperature 55.0 - 160 °C	@Temperature 131 - 320 °F	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+13 - 3.30e+17 ohm-cm	1.00e+13 - 3.30e+17 ohm-cm	Average value: 2.04e+16 ohm-cm Grade Count:34
Surface Resistance	1.00e+13 - 3.00e+15 ohm	1.00e+13 - 3.00e+15 ohm	Average value: 4.48e+14 ohm Grade Count:19

Electrical Properties	Metric ^{1.80}	English ⁸⁰	Comments ^{ue: 3.68 Grade Count:27}
Dielectric Strength	19.3 - 40.0 kV/mm	490 - 1020 kV/in	Average value: 25.1 kV/mm Grade Count:28
	12.0 - 24.0 kV/mm @Temperature 95.0 - 200 °C	305 - 610 kV/in @Temperature 203 - 392 °F	Average value: 18.9 kV/mm Grade Count:2
	12.0 - 24.0 kV/mm @Thickness 1.57 - 3.20 mm	305 - 610 kV/in @Thickness 0.0618 - 0.126 in	Average value: 18.9 kV/mm Grade Count:2
Dissipation Factor	0.00100 - 0.0210	0.00100 - 0.0210	Average value: 0.0125 Grade Count:16
Arc Resistance	77.0 - 129 sec	77.0 - 129 sec	Average value: 109 sec Grade Count:13
Comparative Tracking Index	15.0 - 400 V	15.0 - 400 V	Average value: 225 V Grade Count:20

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