

Overview of materials for Syndiotactic Polystyrene (SPS) with Glass or Carbon Fiber

Category : Polymer , Thermoplastic , Polystyrene (PS) , Syndiotactic Polystyrene (SPS) , Syndiotactic Polystyrene (SPS) with Glass or Carbon Fiber

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Syndiotactic Polystyrene (SPS) with Glass or Carbon Fiber". 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-Syndiotactic-Polystyrene-SPS-with-Glass-or-Carbon-Fiber.php

Physical Properties	Metric	English	Comments
Density	1.08 - 1.54 g/cc	0.0390 - 0.0556 lb/in ³	Average value: 1.30 g/cc Grade Count:65
Filler Content	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 28.0 % Grade Count:40
Water Absorption	0.00900 - 0.220 %	0.00900 - 0.220 %	Average value: 0.0244 % Grade Count:46
Moisture Absorption at Equilibrium	0.0100 - 0.450 %	0.0100 - 0.450 %	Average value: 0.150 % Grade Count:3
Linear Mold Shrinkage	0.00100 - 0.00900 cm/cm	0.00100 - 0.00900 in/in	Average value: 0.00291 cm/cm Grade Count:52
Linear Mold Shrinkage, Transverse	0.00200 - 0.0110 cm/cm	0.00200 - 0.0110 in/in	Average value: 0.00592 cm/cm Grade Count:24

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	65.5 - 175 MPa	9500 - 25400 psi	Average value: 114 MPa Grade Count:60
Tensile Strength, Yield	92.0 - 132 MPa	13300 - 19100 psi	Average value: 113 MPa Grade Count:19
Elongation at Break	0.600 - 3.00 %	0.600 - 3.00 %	Average value: 1.76 % Grade Count:47
Modulus of Elasticity	4.14 - 24.1 GPa	600 - 3500 ksi	Average value: 10.1 GPa Grade Count:55
Flexural Yield Strength	103 - 250 MPa	15000 - 36300 psi	Average value: 172 MPa Grade Count:47
Flexural Modulus	4.14 - 24.1 GPa	600 - 3500 ksi	Average value: 9.97 GPa Grade Count:52
Izod Impact, Notched	0.427 - 1.49 J/cm	0.800 - 2.80 ft-lb/in	Average value: 0.870 J/cm Grade Count:47
Izod Impact, Unnotched	1.44 - 13.3 J/cm	2.70 - 25.0 ft-lb/in	Average value: 4.11 J/cm Grade Count:27

Mechanical Properties	Metric	English	Comments
Izod Impact, Notched (ISO)	3.70 - 13.0 kJ/m ²	1.76 - 6.19 ft-lb/in ²	Average value: 10.1 kJ/m ² Grade Count:20
Izod Impact, Unnotched (ISO)	17.0 - 57.0 kJ/m ²	8.09 - 27.1 ft-lb/in ²	Average value: 36.9 kJ/m ² Grade Count:19
Charpy Impact Unnotched	2.30 - 6.80 J/cm ²	10.9 - 32.4 ft-lb/in ²	Average value: 4.31 J/cm ² Grade Count:17
Charpy Impact, Notched	0.800 - 1.40 J/cm ²	3.81 - 6.66 ft-lb/in ²	Average value: 1.14 J/cm ² Grade Count:17

Thermal Properties	Metric	English	Comments
CTE, linear	15.0 - 42.3 µm/m-°C	8.33 - 23.5 µin/in-°F	Average value: 24.0 µm/m-°C Grade Count:31
	18.0 - 18.0 µm/m-°C @Temperature 100 - 100 °C	10.0 - 10.0 µin/in-°F @Temperature 212 - 212 °F	Average value: 18.0 µm/m-°C Grade Count:1
CTE, linear, Transverse to Flow	29.0 - 61.0 µm/m-°C	16.1 - 33.9 µin/in-°F	Average value: 47.7 µm/m-°C Grade Count:17
Deflection Temperature at 0.46 MPa (66 psi)	140 - 270 °C	284 - 518 °F	Average value: 257 °C Grade Count:34
Deflection Temperature at 1.8 MPa (264 psi)	104 - 263 °C	219 - 505 °F	Average value: 225 °C Grade Count:53
Vicat Softening Point	255 - 263 °C	491 - 505 °F	Average value: 262 °C Grade Count:14
UL RTI, Electrical	50.0 - 130 °C	122 - 266 °F	Average value: 95.0 °C Grade Count:14
UL RTI, Mechanical with Impact	50.0 - 120 °C	122 - 248 °F	Average value: 91.0 °C Grade Count:14
UL RTI, Mechanical without Impact	50.0 - 130 °C	122 - 266 °F	Average value: 92.0 °C Grade Count:14
Flammability, UL94	HB - 5VA	HB - 5VA	Grade Count:34

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+14 - 1.30e+18 ohm-cm	1.00e+14 - 1.30e+18 ohm-cm	Average value: 8.45e+16 ohm-cm Grade Count:17
Dielectric Constant	3.00 - 3.50	3.00 - 3.50	Average value: 3.15 Grade Count:16
Dielectric Strength	17.0 - 45.0 kV/mm	432 - 1140 kV/in	Average value: 25.4 kV/mm Grade Count:32
Dissipation Factor	0.00100 - 0.0690	0.00100 - 0.0690	Average value: 0.00675 Grade Count:24
Arc Resistance	60.0 - 180 sec	60.0 - 180 sec	Average value: 137 sec Grade Count:14

Comparative Tracking Index Electrical Properties	250 - 600 V Metric	250 - 600 V English	Average value: 421 V Grade Count:21 Comments
Hot Wire Ignition, HWI	0.000 - 120 sec	0.000 - 120 sec	Average value: 54.3 sec Grade Count:14
High Amp Arc Ignition, HAI	30.0 - 120 arcs	30.0 - 120 arcs	Average value: 115 arcs Grade Count:14
High Voltage Arc-Tracking Rate, HVTR	0.000 - 150 mm/min	0.000 - 5.91 in/min	Average value: 30.5 mm/min Grade Count:10

Processing Properties	Metric	English	Comments
Processing Temperature	271 - 327 °C	520 - 620 °F	Average value: 299 °C Grade Count:5
Melt Temperature	270 - 327 °C	518 - 620 °F	Average value: 303 °C Grade Count:45
Mold Temperature	40.0 - 155 °C	104 - 311 °F	Average value: 106 °C Grade Count:50
Drying Temperature	80.0 - 100 °C	176 - 212 °F	Average value: 83.7 °C Grade Count:31
Moisture Content	0.0200 %	0.0200 %	Average value: 0.0200 % Grade Count:19
Dew Point	-28.9 °C	-20.0 °F	Average value: -28.9 °C Grade Count:19
Injection Pressure	68.9 - 103 MPa	10000 - 15000 psi	Average value: 86.2 MPa Grade Count:24

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