

Overview of materials for Polystyrene, Impact Modified

Category : Polymer , Thermoplastic , Polystyrene (PS) , Polystyrene, Impact Modified

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polystyrene, Impact Modified". 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-Polystyrene-Impact-Modified.php

Physical Properties	Metric	English	Comments
Density	0.884 - 2.12 g/cc	0.0319 - 0.0766 lb/in ³	Average value: 1.05 g/cc Grade Count:383
Water Absorption	0.000 - 0.600 %	0.000 - 0.600 %	Average value: 0.0931 % Grade Count:82
Moisture Absorption at Equilibrium	0.0200 - 0.120 %	0.0200 - 0.120 %	Average value: 0.0929 % Grade Count:51
Water Absorption at Saturation	0.0200 - 0.450 %	0.0200 - 0.450 %	Average value: 0.125 % Grade Count:31
Particle Size	0.800 - 4000 µm	0.800 - 4000 µm	Average value: 1240 µm Grade Count:23
Maximum Moisture Content	0.0100	0.0100	Average value: 0.0100 Grade Count:8
Linear Mold Shrinkage	0.00200 - 0.0450 cm/cm	0.00200 - 0.0450 in/in	Average value: 0.00606 cm/cm Grade Count:250
Linear Mold Shrinkage, Transverse	0.00200 - 0.00600 cm/cm	0.00200 - 0.00600 in/in	Average value: 0.00467 cm/cm Grade Count:3
Melt Flow	0.900 - 99.0 g/10 min	0.900 - 99.0 g/10 min	Average value: 8.02 g/10 min Grade Count:409
Spiral Flow	44.0 - 45.0 cm @Temperature 220 - 220 °C	17.3 - 17.7 in @Temperature 428 - 428 °F	Average value: 44.5 cm Grade Count:2

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell L	42.0 - 84.0	42.0 - 84.0	Average value: 57.6 Grade Count:48
Hardness, Rockwell M	10.0 - 103	10.0 - 103	Average value: 63.7 Grade Count:42
Hardness, Rockwell R	53.0 - 124	53.0 - 124	Average value: 96.8 Grade Count:75
Hardness, H358/30	95.0 - 135 MPa	13800 - 19600 psi	Average value: 110 MPa Grade Count:3

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	59.0 - 76.0 MPa	8700 - 11000 psi	Average value: 82.9 MPa Grade Count:21
Tensile Strength, Yield	12.4 - 200 MPa	1800 - 29000 psi	Average value: 26.9 MPa Grade Count:206
Elongation at Break	11.7 - 200 MPa	1700 - 29000 psi	Average value: 27.9 MPa Grade Count:339
Elongation at Yield	1.30 - 350 %	1.30 - 350 %	Average value: 44.4 % Grade Count:374
Modulus of Elasticity	1.00 - 75.0 %	1.00 - 75.0 %	Average value: 15.6 % Grade Count:91
Flexural Yield Strength	1.10 - 5.60 GPa	160 - 812 ksi	Average value: 2.03 GPa Grade Count:253
Flexural Modulus	3.92 - 131 MPa	569 - 19000 psi	Average value: 47.4 MPa Grade Count:273
Izod Impact, Notched	0.686 - 7.11 GPa	99.6 - 1030 ksi	Average value: 2.10 GPa Grade Count:299
	0.150 - 9.61 J/cm	0.281 - 18.0 ft-lb/in	Average value: 1.16 J/cm Grade Count:343
	0.260 - 1.81526 J/cm	0.487 - 3.40073 ft-lb/in	Average value: 0.562 J/cm Grade Count:19
	@Temperature -50.0 - -17.8 °C	@Temperature -58.0 - 0.000 °F	
	0.196133 - 0.85424 J/cm	0.367438 - 1.6003 ft-lb/in	Average value: 0.562 J/cm Grade Count:9
	@Temperature -30.0 - -18.0 °C	@Temperature -22.0 - -0.400 °F	
	0.196133 - 0.85424 J/cm	0.367438 - 1.6003 ft-lb/in	Average value: 0.562 J/cm Grade Count:9
	@Thickness 3.17 - 6.50 mm	@Thickness 0.125 - 0.256 in	
Izod Impact, Unnotched	0.801 - 10.7 J/cm	1.50 - 20.0 ft-lb/in	Average value: 3.62 J/cm Grade Count:22
Izod Impact, Notched (ISO)	2.00 - 20.0 kJ/m ²	0.952 - 9.52 ft-lb/in ²	Average value: 8.39 kJ/m ² Grade Count:45
	2.00 - 14.0 kJ/m ²	0.952 - 6.66 ft-lb/in ²	Average value: 5.75 kJ/m ² Grade Count:5
	@Temperature -40.0 - -30.0 °C	@Temperature -40.0 - -22.0 °F	
	3.50 - 6.50 kJ/m ²	1.67 - 3.09 ft-lb/in ²	Average value: 5.75 kJ/m ² Grade Count:7
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
	3.50 - 6.50 kJ/m ²	1.67 - 3.09 ft-lb/in ²	Average value: 5.75 kJ/m ² Grade Count:7
	@Thickness 4.00 - 4.00 mm	@Thickness 0.157 - 0.157 in	

Mechanical Properties (ISO)	Metric J/m^2 - NB	English lb/in^2 - NB	Comments
	20.0 - 20.0 kJ/m^2	9.52 - 9.52 $ft-lb/in^2$	Average value: 29.4 kJ/m^2 Grade Count:24
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	Average value: 20.0 kJ/m^2 Grade Count:1
Charpy Impact Unnotched	0.500 J/cm^2 - NB	2.38 $ft-lb/in^2$ - NB	Average value: 8.45 J/cm^2 Grade Count:67
	3.00 J/cm^2 - NB	14.3 $ft-lb/in^2$ - NB	Average value: 9.10 J/cm^2 Grade Count:37
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
Charpy Impact, Notched	0.100 - 2.50 J/cm^2	0.476 - 11.9 $ft-lb/in^2$	Average value: 0.992 J/cm^2 Grade Count:68
	0.350 - 0.700 J/cm^2	1.67 - 3.33 $ft-lb/in^2$	Average value: 0.550 J/cm^2 Grade Count:10
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
Gardner Impact	5.65 - 36.2 J	4.17 - 26.7 $ft-lb$	Average value: 23.8 J Grade Count:17
Falling Dart Impact	9.04 - 583 J	6.67 - 430 $ft-lb$	Average value: 63.3 J Grade Count:21
	528.77 - 528.77 J	390.00 - 390.00 $ft-lb$	Average value: 529 J Grade Count:1
	@Temperature -40.0 - -40.0 °C	@Temperature -40.0 - -40.0 °F	
Tensile Creep Modulus, 1 hour	1800 - 2200 MPa	261000 - 319000 psi	Average value: 2080 MPa Grade Count:5
Tensile Creep Modulus, 1000 hours	1300 - 1800 MPa	189000 - 261000 psi	Average value: 1630 MPa Grade Count:8
Taber Abrasion, mg/1000 Cycles	35.0 - 75.0	35.0 - 75.0	Average value: 61.7 Grade Count:3

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1000 - 1.00e+18 ohm-cm	1000 - 1.00e+18 ohm-cm	Average value: 1.25e+17 ohm-cm Grade Count:110
Surface Resistance	100 - 5.00e+16 ohm	100 - 5.00e+16 ohm	Average value: 9.73e+14 ohm Grade Count:92
Static Decay	0.0100 - 2.00 sec	0.0100 - 2.00 sec	Average value: 0.396 sec Grade Count:5
Dielectric Constant	2.00 - 3.00	2.00 - 3.00	Average value: 2.47 Grade Count:104
Dielectric Strength	15.7 - 155 kV/mm	400 - 3940 kV/in	Average value: 50.2 kV/mm Grade Count:122
Dissipation Factor	0.000100 - 0.0100	0.000100 - 0.0100	Average value: 0.000751 Grade Count:55
			Average value: 117 sec Grade

Arc Resistance Electrical Properties	60.0 - 180 sec Metric	60.0 - 180 sec English	Count:17 Comments
Comparative Tracking Index	250 - 600 V	250 - 600 V	Average value: 455 V Grade Count:52
Hot Wire Ignition, HWI	7.00 - 120 sec	7.00 - 120 sec	Average value: 24.1 sec Grade Count:15
High Amp Arc Ignition, HAI	60.0 - 120 arcs	60.0 - 120 arcs	Average value: 112 arcs Grade Count:14
High Voltage Arc-Tracking Rate, HVTR	10.0 - 80.0 mm/min	0.394 - 3.15 in/min	Average value: 37.1 mm/min Grade Count:13

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