

Overview of materials for Acrylic, Impact Modified, Molded

Category : Polymer , Thermoplastic , Acrylic (PMMA) , Acrylic, Impact Modified, Molded

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.04 - 1.19 g/cc	0.0376 - 0.0430 lb/in ³	Average value: 1.15 g/cc Grade Count:125
Water Absorption	0.100 - 2.00 %	0.100 - 2.00 %	Average value: 0.366 % Grade Count:61
Moisture Absorption at Equilibrium	0.300 - 0.400 %	0.300 - 0.400 %	Average value: 0.360 % Grade Count:7
Water Absorption at Saturation	0.300 %	0.300 %	Average value: 0.300 % Grade Count:6
Viscosity	975000 - 975000 cP	975000 - 975000 cP	Average value: 975000 cP Grade Count:1
	@Temperature 240 - 240 °C	@Temperature 464 - 464 °F	
	975000 - 975000 cP	975000 - 975000 cP	Average value: 975000 cP Grade Count:1
	@Shear Rate 100 - 100 1/s	@Shear Rate 100 - 100 1/s	
Linear Mold Shrinkage	0.00200 - 0.00800 cm/cm	0.00200 - 0.00800 in/in	Average value: 0.00504 cm/cm Grade Count:104
Melt Flow	0.700 - 16.0 g/10 min	0.700 - 16.0 g/10 min	Average value: 4.18 g/10 min Grade Count:124

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	20.0 - 95.0	20.0 - 95.0	Average value: 56.4 Grade Count:57
Hardness, Rockwell R	61.0 - 117	61.0 - 117	Average value: 78.6 Grade Count:8
Tensile Strength, Ultimate	32.0 - 82.0 MPa	4640 - 11900 psi	Average value: 50.0 MPa Grade Count:107
Tensile Strength, Yield	28.0 - 60.0 MPa	4060 - 8700 psi	Average value: 42.2 MPa Grade Count:17
Elongation at Break	1.90 - 90.0 %	1.90 - 90.0 %	Average value: 30.3 % Grade Count:121
Elongation at Yield	1.90 - 40.0 %	1.90 - 40.0 %	Average value: 5.76 % Grade Count:38

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	1.38 - 3.52 GPa	200 - 510 ksi	Average value: 2.13 GPa Grade Count:92
Flexural Yield Strength	41.2 - 105 MPa	5970 - 15200 psi	Average value: 69.8 MPa Grade Count:110
Flexural Modulus	1.36 - 3.38 GPa	198 - 490 ksi	Average value: 2.11 GPa Grade Count:71
Izod Impact, Notched	0.200 - 2.45 J/cm	0.375 - 4.59 ft-lb/in	Average value: 0.585 J/cm Grade Count:94
	0.240255 - 0.37373 J/cm	0.450096 - 0.70015 ft-lb/in	Average value: 0.330 J/cm Grade Count:6
	@Temperature 0.000 - 0.000 °C	@Temperature 32.0 - 32.0 °F	
	0.260 - 0.590 J/cm	0.487 - 1.11 ft-lb/in	Average value: 0.330 J/cm Grade Count:2
	@Temperature 0.000 - 0.000 °C	@Temperature 32.0 - 32.0 °F	
	0.260 - 0.590 J/cm	0.487 - 1.11 ft-lb/in	Average value: 0.330 J/cm Grade Count:2
	@Thickness 6.35 - 6.35 mm	@Thickness 0.250 - 0.250 in	
	0.210 - 0.64068 J/cm	0.393 - 1.2003 ft-lb/in	Average value: 0.330 J/cm Grade Count:10
	@Diameter 6.35 - 6.35 mm	@Diameter 0.250 - 0.250 in	
	0.210 - 0.64068 J/cm	0.393 - 1.2003 ft-lb/in	Average value: 0.330 J/cm Grade Count:10
	@Temperature 0.000 - 0.000 °C	@Temperature 32.0 - 32.0 °F	
Izod Impact, Unnotched	1.60 J/cm - NB	3.00 ft-lb/in - NB	Average value: 3.92 J/cm Grade Count:7
Izod Impact, Notched (ISO)	2.10 - 8.00 kJ/m ²	0.999 - 3.81 ft-lb/in ²	Average value: 4.43 kJ/m ² Grade Count:19
Izod Impact, Unnotched (ISO)	1.50 - 3.40 kJ/m ²	0.714 - 1.62 ft-lb/in ²	Average value: 2.14 kJ/m ² Grade Count:5
Charpy Impact Unnotched	2.10 - 8.00 J/cm ²	9.99 - 38.1 ft-lb/in ²	Average value: 5.82 J/cm ² Grade Count:18
Charpy Impact, Notched	0.210 - 5.40 J/cm ²	0.999 - 25.7 ft-lb/in ²	Average value: 1.36 J/cm ² Grade Count:26
Gardner Impact	1.58 - 11.0 J	1.17 - 8.11 ft-lb	Average value: 4.61 J Grade Count:47

Thermal Properties	Metric	English	Comments
CTE, linear	60.0 - 123 µm/m-°C	33.3 - 68.3 µin/in-°F	Average value: 90.1 µm/m-°C Grade Count:88
	72.0 - 93.6 µm/m-°C	40.0 - 52.0 µin/in-°F	

Thermal Properties	Metric	English	Comments
	@ Temperature 0.000 - 156 °C	@ Temperature 32.0 - 312 °F	Average value: 78.6 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:0
Specific Heat Capacity	1.90 - 2.30 J/g-°C @Temperature 100 - 175 °C	0.454 - 0.550 BTU/lb-°F @Temperature 212 - 347 °F	Average value: 2.10 J/g-°C Grade Count:1
Thermal Conductivity	0.202 - 0.220 W/m-K	1.40 - 1.53 BTU-in/hr-ft ² -°F	Average value: 0.210 W/m-K Grade Count:5
Maximum Service Temperature, Air	50.0 - 90.0 °C	122 - 194 °F	Average value: 72.9 °C Grade Count:14
Deflection Temperature at 0.46 MPa (66 psi)	78.0 - 98.0 °C	172 - 208 °F	Average value: 87.8 °C Grade Count:12
Deflection Temperature at 1.8 MPa (264 psi)	73.0 - 111 °C	163 - 232 °F	Average value: 84.4 °C Grade Count:114
Vicat Softening Point	82.0 - 115 °C	180 - 239 °F	Average value: 102 °C Grade Count:122
Annealing Point	60.0 - 70.0 °C	140 - 158 °F	Average value: 65.0 °C Grade Count:8
Heat Distortion Temperature	80.0 - 97.0 °C	176 - 207 °F	Average value: 90.3 °C Grade Count:8
Flammability, UL94	HB	HB	Grade Count:64
Oxygen Index	18.0 - 19.0 %	18.0 - 19.0 %	Average value: 18.2 % Grade Count:6
Glow Wire Test	650 °C	1200 °F	Average value: 650 °C Grade Count:19

Optical Properties	Metric	English	Comments
Refractive Index	1.49 - 1.57	1.49 - 1.57	Average value: 1.50 Grade Count:51
Haze	0.500 - 96.0 %	0.500 - 96.0 %	Average value: 4.05 % Grade Count:92
Yellow Index	-1.50 - 5.50 %	-1.50 - 5.50 %	Average value: 0.879 % Grade Count:19
Transmission, Visible	0.000 - 92.0 %	0.000 - 92.0 %	Average value: 86.3 % Grade Count:116

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+14 - 1.00e+15 ohm-cm	1.00e+14 - 1.00e+15 ohm-cm	Average value: 7.00e+14 ohm-cm Grade Count:15
Surface Resistance	1.00e+14 ohm	1.00e+14 ohm	Average value: 1.00e+14 ohm Grade Count:7
Dielectric Constant	2.90 - 3.90	2.90 - 3.90	Average value: 3.30 Grade Count:15
Dielectric Strength	15.0 - 60.0 kV/mm	381 - 1520 kV/in	Average value: 30.0 kV/mm Grade Count:15

Electrical Properties	Metric	English	Comments
Dissipation Factor	0.0300 - 0.0500	0.0300 - 0.0500	Average value: 0.0386 Grade Count:15
Comparative Tracking Index	600 V	600 V	Average value: 600 V Grade Count:7

Processing Properties	Metric	English	Comments
Processing Temperature	210 - 250 °C	410 - 482 °F	Average value: 230 °C Grade Count:8
Melt Temperature	179 - 260 °C	354 - 500 °F	Average value: 229 °C Grade Count:41
Mold Temperature	27.0 - 107 °C	80.6 - 225 °F	Average value: 61.1 °C Grade Count:39
Drying Temperature	60.0 - 105 °C	140 - 221 °F	Average value: 80.0 °C Grade Count:33

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