

Overview of materials for Acrylonitrile Butadiene Styrene (ABS), Heat Resistant, Molded

Category : Polymer , Thermoplastic , ABS Polymer , Acrylonitrile Butadiene Styrene (ABS), Heat Resistant, Molded

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Acrylonitrile Butadiene Styrene (ABS), Heat Resistant, 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-Acrylonitrile-Butadiene-Styrene-ABS-Heat-Resistant-Molded.php

Physical Properties	Metric	English	Comments
Density	0.890 - 1.21 g/cc	0.0322 - 0.0437 lb/in ³	Average value: 1.06 g/cc Grade Count:130
Water Absorption	0.0500 - 1.00 %	0.0500 - 1.00 %	Average value: 0.598 % Grade Count:21
Moisture Absorption at Equilibrium	0.200 - 0.250 %	0.200 - 0.250 %	Average value: 0.208 % Grade Count:13
Viscosity	225000 - 255000 cP @Temperature 260 - 260 °C	225000 - 255000 cP @Temperature 500 - 500 °F	Average value: 245000 cP Grade Count:3
Maximum Moisture Content	0.0100 - 0.0200	0.0100 - 0.0200	Average value: 0.0104 Grade Count:27
Linear Mold Shrinkage	0.00200 - 0.00800 cm/cm	0.00200 - 0.00800 in/in	Average value: 0.00552 cm/cm Grade Count:106
Linear Mold Shrinkage, Transverse	0.00200 - 0.00640 cm/cm	0.00200 - 0.00640 in/in	Average value: 0.00570 cm/cm Grade Count:11
Melt Flow	0.200 - 26.0 g/10 min	0.200 - 26.0 g/10 min	Average value: 5.91 g/10 min Grade Count:136

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	100 - 116	100 - 116	Average value: 109 Grade Count:89
Ball Indentation Hardness	95.0 - 115 MPa	13800 - 16700 psi	Average value: 104 MPa Grade Count:13
Tensile Strength, Ultimate	19.6 - 49.0 MPa	2840 - 7110 psi	Average value: 39.8 MPa Grade Count:29
Tensile Strength, Yield	33.0 - 108 MPa	4790 - 15600 psi	Average value: 46.4 MPa Grade Count:125
Elongation at Break	2.50 - 70.0 %	2.50 - 70.0 %	Average value: 23.7 % Grade Count:78

Elongation at Yield Mechanical Properties	2.00 - 6.00 % Metric	2.00 - 6.00 % English	Average value: 3.19 % Grade Count:44 Comments
Modulus of Elasticity	1.70 - 2.70 GPa	247 - 392 ksi	Average value: 2.27 GPa Grade Count:50
Flexural Yield Strength	45.6 - 142 MPa	6610 - 20600 psi	Average value: 73.4 MPa Grade Count:87
Flexural Modulus	1.73 - 6.86 GPa	250 - 996 ksi	Average value: 2.41 GPa Grade Count:106
Izod Impact, Notched	0.392 - 4.00 J/cm	0.735 - 7.49 ft-lb/in	Average value: 1.77 J/cm Grade Count:104
	0.370 - 1.60 J/cm @Temperature -40.0 - 0.000 °C	0.693 - 3.00 ft-lb/in @Temperature -40.0 - 32.0 °F	Average value: 0.826 J/cm Grade Count:10
	0.588399 - 0.686465 J/cm @Temperature -30.0 - - 30.0 °C	1.10231 - 1.28603 ft-lb/in @Temperature -22.0 - - 22.0 °F	Average value: 0.826 J/cm Grade Count:1
	0.588399 - 0.686465 J/cm @Thickness 3.17 - 6.35 mm	1.10231 - 1.28603 ft-lb/in @Thickness 0.125 - 0.250 in	Average value: 0.826 J/cm Grade Count:1
Izod Impact, Unnotched	0.392266 - 1.27486 J/cm @Temperature -30.0 - - 30.0 °C	0.734875 - 2.38834 ft-lb/in @Temperature -22.0 - - 22.0 °F	Average value: 0.824 J/cm Grade Count:26
	0.392266 - 1.27486 J/cm @Thickness 3.20 - 6.40 mm	0.734875 - 2.38834 ft-lb/in @Thickness 0.126 - 0.252 in	Average value: 0.824 J/cm Grade Count:26
Izod Impact, Notched (ISO)	10.0 - 32.0 kJ/m ²	4.76 - 15.2 ft-lb/in ²	Average value: 17.7 kJ/m ² Grade Count:15
	4.00 - 12.0 kJ/m ² @Temperature -30.0 - - 30.0 °C	1.90 - 5.71 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 8.83 kJ/m ² Grade Count:10
Charpy Impact Unnotched	6.00 J/cm ² - NB	28.6 ft-lb/in ² - NB	Average value: 12.5 J/cm ² Grade Count:35
	5.00 - 18.0 J/cm ² @Temperature -30.0 - - 30.0 °C	23.8 - 85.7 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 10.5 J/cm ² Grade Count:22
Charpy Impact, Notched	0.600 - 3.20 J/cm ²	2.86 - 15.2 ft-lb/in ²	Average value: 1.58 J/cm ² Grade Count:39
	0.300 - 1.30 J/cm ²	1.43 - 6.19 ft-lb/in ²	Average value: 0.774 J/cm ² Grade

Mechanical Properties	Metric @ Temperature -30.0 - - 20.0 °C	English @ Temperature -22.0 - - 4.00 °F	Count:27 Comments
Gardner Impact	2.71 - 22.6 J	2.00 - 16.7 ft-lb	Average value: 12.6 J Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	0.700 - 102 µm/m-°C	0.389 - 56.7 µin/in-°F	Average value: 78.3 µm/m-°C Grade Count:41
Thermal Conductivity	0.128 - 0.200 W/m-K	0.888 - 1.39 BTU-in/hr-ft ² -°F	Average value: 0.161 W/m-K Grade Count:5
Deflection Temperature at 0.46 MPa (66 psi)	91.0 - 122 °C	196 - 252 °F	Average value: 105 °C Grade Count:84
Deflection Temperature at 1.8 MPa (264 psi)	76.7 - 130 °C	170 - 266 °F	Average value: 98.1 °C Grade Count:122
Vicat Softening Point	97.0 - 165 °C	207 - 329 °F	Average value: 111 °C Grade Count:111
Glass Transition Temp, Tg	108 - 127 °C	226 - 261 °F	Average value: 116 °C Grade Count:9
UL RTI, Electrical	50.0 - 85.0 °C	122 - 185 °F	Average value: 62.0 °C Grade Count:20
UL RTI, Mechanical with Impact	50.0 - 85.0 °C	122 - 185 °F	Average value: 62.0 °C Grade Count:20
UL RTI, Mechanical without Impact	50.0 - 85.0 °C	122 - 185 °F	Average value: 62.0 °C Grade Count:20
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:76
Glow Wire Test	650 - 750 °C	1200 - 1380 °F	Average value: 664 °C Grade Count:6

Optical Properties	Metric	English	Comments
Gloss	30.0 - 98.0 %	30.0 - 98.0 %	Average value: 65.7 % Grade Count:15

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+14 - 1.00e+16 ohm-cm	1.00e+14 - 1.00e+16 ohm-cm	Average value: 1.46e+15 ohm-cm Grade Count:33
Surface Resistance	1.00e+14 - 1.00e+16 ohm	1.00e+14 - 1.00e+16 ohm	Average value: 1.00e+15 ohm Grade Count:19
Dielectric Constant	2.70 - 3.20	2.70 - 3.20	Average value: 3.00 Grade Count:19
Dielectric Strength	18.0 - 41.0 kV/mm	457 - 1040 kV/in	Average value: 32.1 kV/mm Grade Count:36
Dissipation Factor	0.00400 - 0.0130	0.00400 - 0.0130	Average value: 0.00747 Grade Count:19
Arc Resistance			Average value: 90.0 sec Grade

Electrical Properties	60.0 - 120 sec Metric	60.0 - 120 sec English	Count:14 Comments
Comparative Tracking Index	250 - 600 V	250 - 600 V	Average value: 593 V Grade Count:37
Hot Wire Ignition, HWI	7.00 - 60.0 sec	7.00 - 60.0 sec	Average value: 20.7 sec Grade Count:14
High Amp Arc Ignition, HAI	30.0 - 120 arcs	30.0 - 120 arcs	Average value: 111 arcs Grade Count:14
High Voltage Arc-Tracking Rate, HVTR	10.0 - 150 mm/min	0.394 - 5.91 in/min	Average value: 38.6 mm/min Grade Count:14

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