

Overview of materials for Acrylonitrile Butadiene Styrene (ABS)/Nylon Blend

Category : Polymer , Thermoplastic , ABS Polymer , Acrylonitrile Butadiene Styrene (ABS)/Nylon Blend , Nylon

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Acrylonitrile Butadiene Styrene (ABS)/Nylon Blend". 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-Nylon-Blend.php

Physical Properties	Metric	English	Comments
Density	0.900 - 1.15 g/cc	0.0325 - 0.0415 lb/in ³	Average value: 1.06 g/cc Grade Count:60
Filler Content	8.00 - 9.00 %	8.00 - 9.00 %	Average value: 8.33 % Grade Count:3
Water Absorption	0.200 - 6.00 %	0.200 - 6.00 %	Average value: 2.17 % Grade Count:28
Moisture Absorption at Equilibrium	1.10 - 2.00 %	1.10 - 2.00 %	Average value: 1.54 % Grade Count:26
Water Absorption at Saturation	2.00 - 4.30 %	2.00 - 4.30 %	Average value: 3.40 % Grade Count:6
Linear Mold Shrinkage	0.00450 - 0.0110 cm/cm	0.00450 - 0.0110 in/in	Average value: 0.00776 cm/cm Grade Count:43
Linear Mold Shrinkage, Transverse	0.00600 - 0.0140 cm/cm	0.00600 - 0.0140 in/in	Average value: 0.00811 cm/cm Grade Count:18
Melt Flow	1.00 - 64.2 g/10 min	1.00 - 64.2 g/10 min	Average value: 15.1 g/10 min Grade Count:38

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	69.0 - 116	69.0 - 116	Average value: 99.2 Grade Count:23
Hardness, Shore D	64.0	64.0	Average value: 64.0 Grade Count:3
Tensile Strength, Ultimate	30.0 - 63.8 MPa	4350 - 9250 psi	Average value: 42.6 MPa Grade Count:34
Tensile Strength, Yield	27.0 - 55.0 MPa	3920 - 7980 psi	Average value: 39.8 MPa Grade Count:38
	64.0 - 64.0 MPa @Temperature -40.0 - -40.0 °C	9280 - 9280 psi @Temperature -40.0 - -40.0 °F	Average value: 64.0 MPa Grade Count:1
Elongation at Break	3.10 - 230 %	3.10 - 230 %	Average value: 81.5 % Grade Count:54
Elongation at Yield	2.90 - 110 %	2.90 - 110 %	Average value: 8.94 % Grade Count:27

Mechanical Properties	Metric ^{4.80 - 4.80 %}	English ^{4.80 - 4.80 %}	Comments
	@Temperature -40.0 - - 40.0 °C	@Temperature -40.0 - - 40.0 °F	Average value: 4.80 % Grade Count:1
Modulus of Elasticity	0.900 - 3.50 GPa	131 - 508 ksi	Average value: 1.83 GPa Grade Count:35
Flexural Yield Strength	39.3 - 108 MPa	5700 - 15700 psi	Average value: 67.5 MPa Grade Count:42
Flexural Modulus	0.814 - 3.00 GPa	118 - 435 ksi	Average value: 1.84 GPa Grade Count:43
Izod Impact, Notched	0.588 J/cm - NB	1.10 ft-lb/in - NB	Average value: 6.34 J/cm Grade Count:33
	0.5339 - 2.50 J/cm @Temperature -40.0 - 0.000 °C	1.000 - 4.68 ft-lb/in @Temperature -40.0 - 32.0 °F	Average value: 1.05 J/cm Grade Count:10
	0.5339 - 2.50 J/cm @Thickness 3.17 - 6.35 mm	1.000 - 4.68 ft-lb/in @Thickness 0.125 - 0.250 in	Average value: 1.05 J/cm Grade Count:10
Izod Impact, Notched (ISO)	7.00 - 81.0 kJ/m ²	3.33 - 38.5 ft-lb/in ²	Average value: 54.6 kJ/m ² Grade Count:12
	5.00 - 57.0 kJ/m ² @Temperature -40.0 - - 30.0 °C	2.38 - 27.1 ft-lb/in ² @Temperature -40.0 - - 22.0 °F	Average value: 17.3 kJ/m ² Grade Count:7
Izod Impact, Unnotched (ISO)	100 - 160 kJ/m ²	47.6 - 76.1 ft-lb/in ²	Average value: 120 kJ/m ² Grade Count:3
	55.0 - 60.0 kJ/m ² @Temperature -30.0 - - 30.0 °C	26.2 - 28.6 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 57.5 kJ/m ² Grade Count:2
Charpy Impact Unnotched	15.0 J/cm ² - NB	71.4 ft-lb/in ² - NB	Average value: 15.2 J/cm ² Grade Count:21
	0.600 J/cm ² - NB @Temperature -30.0 - - 30.0 °C	2.86 ft-lb/in ² - NB @Temperature -22.0 - - 22.0 °F	Average value: 4.09 J/cm ² Grade Count:21
Charpy Impact, Notched	0.600 - 8.50 J/cm ²	2.86 - 40.5 ft-lb/in ²	Average value: 5.66 J/cm ² Grade Count:27
	0.600 - 5.50 J/cm ² @Temperature -30.0 - - 30.0 °C	2.86 - 26.2 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 1.58 J/cm ² Grade Count:17
Puncture Energy	38.0 - 40.0 J	28.0 - 29.5 ft-lb	Average value: 39.5 J Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	0.650 - 119 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	0.361 - 66.1 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	Average value: 92.7 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ Grade Count:21
CTE, linear, Transverse to Flow	1.00 - 127 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	0.556 - 70.6 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	Average value: 101 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ Grade Count:10
Specific Heat Capacity	2.20 J/g- $^{\circ}\text{C}$	0.526 BTU/lb- $^{\circ}\text{F}$	Average value: 2.20 J/g- $^{\circ}\text{C}$ Grade Count:4
Thermal Conductivity	0.145 W/m-K	1.01 BTU-in/hr-ft 2 - $^{\circ}\text{F}$	Average value: 0.145 W/m-K Grade Count:4
Deflection Temperature at 0.46 MPa (66 psi)	80.0 - 190 $^{\circ}\text{C}$	176 - 374 $^{\circ}\text{F}$	Average value: 102 $^{\circ}\text{C}$ Grade Count:34
Deflection Temperature at 1.8 MPa (264 psi)	51.7 - 110 $^{\circ}\text{C}$	125 - 230 $^{\circ}\text{F}$	Average value: 74.1 $^{\circ}\text{C}$ Grade Count:52
Vicat Softening Point	91.0 - 245 $^{\circ}\text{C}$	196 - 473 $^{\circ}\text{F}$	Average value: 130 $^{\circ}\text{C}$ Grade Count:32
UL RTI, Electrical	60.0 - 110 $^{\circ}\text{C}$	140 - 230 $^{\circ}\text{F}$	Average value: 76.7 $^{\circ}\text{C}$ Grade Count:6
UL RTI, Mechanical with Impact	60.0 - 65.0 $^{\circ}\text{C}$	140 - 149 $^{\circ}\text{F}$	Average value: 61.7 $^{\circ}\text{C}$ Grade Count:6
UL RTI, Mechanical without Impact	60.0 - 105 $^{\circ}\text{C}$	140 - 221 $^{\circ}\text{F}$	Average value: 75.0 $^{\circ}\text{C}$ Grade Count:6
Flammability, UL94	HB	HB	Grade Count:34
Glow Wire Test	650 $^{\circ}\text{C}$	1200 $^{\circ}\text{F}$	Average value: 650 $^{\circ}\text{C}$ Grade Count:3

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+10 - 9.70e+15 ohm-cm	1.00e+10 - 9.70e+15 ohm-cm	Average value: 6.90e+14 ohm-cm Grade Count:32
Surface Resistance	1.00e+13 - 8.30e+15 ohm	1.00e+13 - 8.30e+15 ohm	Average value: 1.32e+15 ohm Grade Count:22
Dielectric Constant	2.90 - 6.70	2.90 - 6.70	Average value: 3.66 Grade Count:32
Dielectric Strength	15.0 - 41.0 kV/mm	380 - 1040 kV/in	Average value: 30.1 kV/mm Grade Count:25
Dissipation Factor	0.00770 - 0.100	0.00770 - 0.100	Average value: 0.0376 Grade Count:30
Comparative Tracking Index	600 V	600 V	Average value: 600 V Grade Count:15

Processing Properties	Metric	English	Comments
Nozzle Temperature	216 - 260 $^{\circ}\text{C}$	420 - 500 $^{\circ}\text{F}$	Average value: 249 $^{\circ}\text{C}$ Grade Count:4
Melt Temperature	204 - 280 $^{\circ}\text{C}$	400 - 536 $^{\circ}\text{F}$	Average value: 250 $^{\circ}\text{C}$ Grade Count:28
Mold Temperature	10.0 - 93.0 $^{\circ}\text{C}$	50.0 - 199 $^{\circ}\text{F}$	Average value: 68.8 $^{\circ}\text{C}$ Grade Count:25

Processing Properties	Metric	English	Comments
Injection Velocity	40.0 - 65.0 mm/sec	1.57 - 2.56 in/sec	Average value: 47.7 mm/sec Grade Count:13
Drying Temperature	85.0 - 88.0 °C	185 - 190 °F	Average value: 87.3 °C Grade Count:4
Moisture Content	0.150 - 0.350 %	0.150 - 0.350 %	Average value: 0.250 % Grade Count:3
Dew Point	-29.0 °C	-20.2 °F	Average value: -29.0 °C Grade Count:3

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