

Overview of materials for Acrylonitrile Butadiene Styrene (ABS), Plating Grade

Category : Polymer , Thermoplastic , ABS Polymer , Acrylonitrile Butadiene Styrene (ABS), Plating Grade

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.03 - 2.50 g/cc	0.0372 - 0.0903 lb/in ³	Average value: 1.11 g/cc Grade Count:25
Water Absorption	0.200 - 1.00 %	0.200 - 1.00 %	Average value: 0.400 % Grade Count:6
Linear Mold Shrinkage	0.00300 - 0.00800 cm/cm	0.00300 - 0.00800 in/in	Average value: 0.00537 cm/cm Grade Count:18
Linear Mold Shrinkage, Transverse	0.00400 - 0.00800 cm/cm	0.00400 - 0.00800 in/in	Average value: 0.00583 cm/cm Grade Count:3
Melt Flow	1.20 - 45.0 g/10 min	1.20 - 45.0 g/10 min	Average value: 13.5 g/10 min Grade Count:24

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	101 - 112	101 - 112	Average value: 107 Grade Count:17
Tensile Strength, Ultimate	20.0 - 46.0 MPa	2900 - 6670 psi	Average value: 37.5 MPa Grade Count:16
Tensile Strength, Yield	36.0 - 54.0 MPa	5220 - 7830 psi	Average value: 44.1 MPa Grade Count:19
Elongation at Break	3.00 - 40.0 %	3.00 - 40.0 %	Average value: 24.3 % Grade Count:18
Elongation at Yield	2.00 - 6.00 %	2.00 - 6.00 %	Average value: 3.30 % Grade Count:8
Modulus of Elasticity	1.70 - 2.62 GPa	247 - 380 ksi	Average value: 2.26 GPa Grade Count:10
Flexural Yield Strength	56.0 - 82.0 MPa	8120 - 11900 psi	Average value: 68.8 MPa Grade Count:19
Flexural Modulus	1.96 - 5.47 GPa	284 - 793 ksi	Average value: 2.44 GPa Grade Count:25
Izod Impact, Notched	0.230 - 5.82 J/cm	0.431 - 10.9 ft-lb/in	Average value: 2.65 J/cm Grade Count:20
	0.5339 - 3.50 J/cm	1.000 - 6.56 ft-lb/in	Average value: 1.23 J/cm Grade

Mechanical Properties	Metric	English	Comments
	0.784532 - 0.882598 J/cm @Temperature -40.0 - -30.0 °C	1.46975 - 1.65347 ft-lb/in @Temperature -40.0 - -22.0 °F	Average value: 1.23 J/cm Grade Count:1
	0.784532 - 0.882598 J/cm @Thickness 3.17 - 6.35 mm	1.46975 - 1.65347 ft-lb/in @Thickness 0.125 - 0.250 in	Average value: 1.23 J/cm Grade Count:1
Izod Impact, Unnotched	1.471 - 1.56906 J/cm @Temperature -30.0 - -30.0 °C	2.756 - 2.93950 ft-lb/in @Temperature -22.0 - -22.0 °F	Average value: 1.52 J/cm Grade Count:1
	1.471 - 1.56906 J/cm @Thickness 3.20 - 6.40 mm	2.756 - 2.93950 ft-lb/in @Thickness 0.126 - 0.252 in	Average value: 1.52 J/cm Grade Count:1
Izod Impact, Notched (ISO)	16.0 - 28.0 kJ/m ²	7.61 - 13.3 ft-lb/in ²	Average value: 20.7 kJ/m ² Grade Count:6
	6.00 - 13.0 kJ/m ² @Temperature -30.0 - -20.0 °C	2.86 - 6.19 ft-lb/in ² @Temperature -22.0 - -4.00 °F	Average value: 8.67 kJ/m ² Grade Count:4
Charpy Impact Unnotched	17.0 J/cm ² - NB	80.9 ft-lb/in ² - NB	Average value: 17.0 J/cm ² Grade Count:3
	1.00 - 11.0 J/cm ² @Temperature -30.0 - -30.0 °C	4.76 - 52.4 ft-lb/in ² @Temperature -22.0 - -22.0 °F	Average value: 6.00 J/cm ² Grade Count:2
Charpy Impact, Notched	1.60 - 2.60 J/cm ²	7.61 - 12.4 ft-lb/in ²	Average value: 2.00 J/cm ² Grade Count:7
	0.600 - 1.20 J/cm ² @Temperature -30.0 - -20.0 °C	2.86 - 5.71 ft-lb/in ² @Temperature -22.0 - -4.00 °F	Average value: 0.875 J/cm ² Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	80.0 - 100 µm/m-°C	44.4 - 55.6 µin/in-°F	Average value: 90.0 µm/m-°C Grade Count:4
Deflection Temperature at 0.46 MPa (66 psi)	87.8 - 106 °C	190 - 223 °F	Average value: 94.4 °C Grade Count:12
Deflection Temperature at 1.8 MPa (264 psi)	76.1 - 203 °C	169 - 397 °F	Average value: 94.0 °C Grade Count:25
Vicat Softening Point	94.0 - 115 °C	201 - 239 °F	Average value: 100 °C Grade Count:21

UL RTI Electrical Thermal Properties	Metric	English	Comments
UL RTI, Mechanical with Impact	60.0 - 80.0 °C	140 - 176 °F	Average value: 63.3 °C Grade Count:4
UL RTI, Mechanical without Impact	60.0 - 80.0 °C	140 - 176 °F	Average value: 63.3 °C Grade Count:4
Flammability, UL94	HB	HB	Grade Count:22
Glow Wire Test	650 °C	1200 °F	Average value: 650 °C Grade Count:3

Optical Properties	Metric	English	Comments
Gloss	90.0 - 98.0 %	90.0 - 98.0 %	Average value: 94.7 % Grade Count:3

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: 4.73e+15 ohm-cm Grade Count:7
Surface Resistance	1.00e+14 - 1.00e+16 ohm	1.00e+14 - 1.00e+16 ohm	Average value: 3.02e+15 ohm Grade Count:4
Dielectric Constant	2.60 - 3.00	2.60 - 3.00	Average value: 2.81 Grade Count:4
Dielectric Strength	18.0 - 38.0 kV/mm	457 - 965 kV/in	Average value: 29.9 kV/mm Grade Count:5
Dissipation Factor	0.00400 - 0.0150	0.00400 - 0.0150	Average value: 0.00771 Grade Count:4
Comparative Tracking Index	600 V	600 V	Average value: 600 V Grade Count:4

Processing Properties	Metric	English	Comments
Melt Temperature	188 - 265 °C	370 - 509 °F	Average value: 220 °C Grade Count:12
Mold Temperature	40.0 - 85.0 °C	104 - 185 °F	Average value: 63.0 °C Grade Count:12
Drying Temperature	70.0 - 93.3 °C	158 - 200 °F	Average value: 83.4 °C Grade Count:12
Injection Pressure	4.83 - 150 MPa	700 - 21800 psi	Average value: 61.7 MPa Grade Count:8

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