

Overview of materials for Acrylonitrile/Styrene/Acrylate (ASA), Unreinforced, Molded

Category : Polymer , Thermoplastic , ASA Polymer , Acrylonitrile/Styrene/Acrylate (ASA), Unreinforced, Molded

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Acrylonitrile/Styrene/Acrylate (ASA), Unreinforced, 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-AcrylonitrileStyreneAcrylate-ASA-Unreinforced-Molded.php

Physical Properties	Metric	English	Comments
Density	1.00 - 1.16 g/cc	0.0361 - 0.0419 lb/in³	Average value: 1.08 g/cc Grade Count:128
Water Absorption	0.300 - 1.65 %	0.300 - 1.65 %	Average value: 0.923 % Grade Count:11
Moisture Absorption at Equilibrium	0.150 - 0.350 %	0.150 - 0.350 %	Average value: 0.249 % Grade Count:20
Water Absorption at Saturation	0.500 - 1.00 %	0.500 - 1.00 %	Average value: 0.620 % Grade Count:15
Maximum Moisture Content	0.0100	0.0100	Average value: 0.0100 Grade Count:11
Linear Mold Shrinkage	0.000 - 0.0100 cm/cm	0.000 - 0.0100 in/in	Average value: 0.00531 cm/cm Grade Count:104
Linear Mold Shrinkage, Transverse	0.00400 - 0.00900 cm/cm	0.00400 - 0.00900 in/in	Average value: 0.00654 cm/cm Grade Count:13
Melt Flow	0.200 - 42.0 g/10 min	0.200 - 42.0 g/10 min	Average value: 7.67 g/10 min Grade Count:125

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	80.0 - 119	80.0 - 119	Average value: 100 Grade Count:76
Tensile Strength, Ultimate	25.0 - 75.5 MPa	3630 - 11000 psi	Average value: 39.2 MPa Grade Count:34
Tensile Strength, Yield	20.7 - 58.3 MPa	3000 - 8450 psi	Average value: 44.5 MPa Grade Count:118
	13.0 - 79.0 MPa @Temperature -40.0 - 80.0 °C	1890 - 11500 psi @Temperature -40.0 - 176 °F	Average value: 45.9 MPa Grade Count:5
Elongation at Break	3.00 - 230 %	3.00 - 230 %	Average value: 31.9 % Grade Count:79

Elongation at Yield Mechanical Properties	2.50 - 6.00 % Metric	2.50 - 6.00 % English	Average value: 3.36 % Grade Count:51 Comments
	1.90 - 5.10 %	1.90 - 5.10 %	
	@Temperature -40.0 - 80.0 °C	@Temperature -40.0 - 176 °F	Average value: 3.45 % Grade Count:5
Modulus of Elasticity	1.45 - 2.85 GPa	210 - 413 ksi	Average value: 2.28 GPa Grade Count:59
Flexural Yield Strength	40.7 - 115 MPa	5900 - 16600 psi	Average value: 69.4 MPa Grade Count:77
Flexural Modulus	1.34 - 3.17 GPa	195 - 460 ksi	Average value: 2.27 GPa Grade Count:111
Izod Impact, Notched	0.320 - 5.87 J/cm	0.600 - 11.0 ft-lb/in	Average value: 1.80 J/cm Grade Count:106
	0.230 - 0.570 J/cm	0.431 - 1.07 ft-lb/in	
	@Temperature -40.0 - - 30.0 °C	@Temperature -40.0 - - 22.0 °F	Average value: 0.377 J/cm Grade Count:22
	0.196133 - 1.07 J/cm	0.367438 - 2.00 ft-lb/in	
	@Temperature -30.0 - - 30.0 °C	@Temperature -22.0 - - 22.0 °F	Average value: 0.377 J/cm Grade Count:11
	0.196133 - 1.07 J/cm	0.367438 - 2.00 ft-lb/in	
	@Thickness 3.17 - 6.40 mm	@Thickness 0.125 - 0.252 in	Average value: 0.377 J/cm Grade Count:11
Izod Impact, Notched (ISO)	5.00 - 42.0 kJ/m²	2.38 - 20.0 ft-lb/in²	Average value: 12.6 kJ/m² Grade Count:28
	2.00 - 16.0 kJ/m²	0.952 - 7.61 ft-lb/in²	
	@Temperature -30.0 - - 30.0 °C	@Temperature -22.0 - - 22.0 °F	Average value: 4.25 kJ/m² Grade Count:24
Izod Impact, Unnotched (ISO)	80.0 - 100 kJ/m²	38.1 - 47.6 ft-lb/in²	Average value: 85.0 kJ/m² Grade Count:4
	40.0 - 45.0 kJ/m²	19.0 - 21.4 ft-lb/in²	
	@Temperature -30.0 - - 30.0 °C	@Temperature -22.0 - - 22.0 °F	Average value: 41.3 kJ/m² Grade Count:4
Charpy Impact Unnotched	8.00 J/cm² - NB	38.1 ft-lb/in² - NB	Average value: 13.9 J/cm² Grade Count:10
	4.00 - 9.00 J/cm²	19.0 - 42.8 ft-lb/in²	
	@Temperature -30.0 - - 30.0 °C	@Temperature -22.0 - - 22.0 °F	Average value: 6.47 J/cm² Grade Count:10
Charpy Impact, Notched	0.700 - 5.77 J/cm²	3.33 - 27.5 ft-lb/in²	Average value: 1.88 J/cm² Grade Count:35
	0.110 - 1.60 J/cm²	0.524 - 7.61 ft-lb/in²	
			Average value: 0.507 J/cm² Grade

Mechanical Properties	Metric @Temperature -30.0 - -30.0 °C	English @Temperature -22.0 - -22.0 °F	Count:20 Comments
Dart Drop, Total Energy	15.0 - 56.0 J	11.1 - 41.3 ft-lb	Average value: 39.5 J Grade Count:4
Tensile Creep Modulus, 1000 hours	1250 - 1650 MPa	181000 - 239000 psi	Average value: 1430 MPa Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	7.90 - 121 µm/m-°C	4.39 - 67.2 µin/in-°F	Average value: 92.5 µm/m-°C Grade Count:43
CTE, linear, Transverse to Flow	86.4 - 130 µm/m-°C	48.0 - 72.2 µin/in-°F	Average value: 101 µm/m-°C Grade Count:25
Hot Ball Pressure Test	90.0 - 95.0 °C	194 - 203 °F	Average value: 93.3 °C Grade Count:6
Deflection Temperature at 0.46 MPa (66 psi)	80.0 - 106 °C	176 - 223 °F	Average value: 94.3 °C Grade Count:52
Deflection Temperature at 1.8 MPa (264 psi)	39.4 - 115 °C	103 - 239 °F	Average value: 86.3 °C Grade Count:118
Vicat Softening Point	78.0 - 133 °C	172 - 271 °F	Average value: 97.6 °C Grade Count:117
UL RTI, Electrical	50.0 °C	122 °F	Average value: 50.0 °C Grade Count:5
UL RTI, Mechanical with Impact	50.0 °C	122 °F	Average value: 50.0 °C Grade Count:5
UL RTI, Mechanical without Impact	50.0 °C	122 °F	Average value: 50.0 °C Grade Count:5
Flammability, UL94	HB	HB	Grade Count:46
Oxygen Index	19.0 %	19.0 %	Average value: 19.0 % Grade Count:6
Glow Wire Test	750 °C	1380 °F	Average value: 750 °C Grade Count:5

Optical Properties	Metric	English	Comments
Haze	6.00 - 8.00 %	6.00 - 8.00 %	Average value: 7.20 % Grade Count:3
Gloss	21.0 - 96.5 %	21.0 - 96.5 %	Average value: 82.8 % Grade Count:16
Transmission, Visible	85.5 - 88.0 %	85.5 - 88.0 %	Average value: 87.2 % Grade Count:3

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 - 1.00e+15 ohm-cm	1.00e+12 - 1.00e+15 ohm-cm	Average value: 1.58e+14 ohm-cm Grade Count:14
Surface Resistance	1.10e+11 - 1.00e+15 ohm	1.10e+11 - 1.00e+15 ohm	Average value: 1.44e+14 ohm Grade Count:8
Dielectric Constant	3.20 - 5.20	3.20 - 5.20	Average value: 3.65 Grade Count:6

Electrical Properties	Metric 15.7 - 35.0 kV/mm	English 400 - 889 kV/in	Comments Average value: 27.6 kV/mm Grade Count:10
Dissipation Factor	0.00900 - 0.150	0.00900 - 0.150	Average value: 0.0266 Grade Count:8
Arc Resistance	60.0 - 180 sec	60.0 - 180 sec	Average value: 105 sec Grade Count:4
Comparative Tracking Index	600 V	600 V	Average value: 600 V Grade Count:6
Hot Wire Ignition, HWI	3.00 - 60.0 sec	3.00 - 60.0 sec	Average value: 18.6 sec Grade Count:6
High Amp Arc Ignition, HAI	0.000 - 120 arcs	0.000 - 120 arcs	Average value: 102 arcs Grade Count:6

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