

Overview of materials for Styrene-Butadiene Copolymer, SBC

Category : Polymer , Thermoplastic , Styrene-Butadiene , Styrene-Butadiene Copolymer, SBC

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Styrene-Butadiene Copolymer, SBC". 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-Styrene-Butadiene-Copolymer-SBC.php

Physical Properties	Metric	English	Comments
Density	0.848 - 7.98 g/cc	0.0306 - 0.288 lb/in ³	Average value: 1.20 g/cc Grade Count:74
Water Absorption	0.0700 - 0.0900 %	0.0700 - 0.0900 %	Average value: 0.0763 % Grade Count:19
Moisture Absorption at Equilibrium	0.0700 %	0.0700 %	Average value: 0.0700 % Grade Count:9
Water Absorption at Saturation	0.0700 %	0.0700 %	Average value: 0.0700 % Grade Count:3
Moisture Vapor Transmission	0.300 - 2.90 cc-mm/m ² -24hr-atm	0.762 - 7.37 cc-mil/100 in ² -24hr-atm	Average value: 1.22 cc-mm/m ² -24hr-atm Grade Count:5
Oxygen Transmission	100 - 173 cc-mm/m ² -24hr-atm	254 - 439 cc-mil/100 in ² -24hr-atm	Average value: 149 cc-mm/m ² -24hr-atm Grade Count:3
Oxygen Transmission Rate	85.0 - 520 cc/m ² /day	5.47 - 33.5 cc/100 in ² /day	Average value: 304 cc/m ² /day Grade Count:4
Linear Mold Shrinkage	0.00200 - 0.0370 cm/cm	0.00200 - 0.0370 in/in	Average value: 0.0129 cm/cm Grade Count:17
Melt Flow	3.01 - 16.3 g/10 min	3.01 - 16.3 g/10 min	Average value: 10.9 g/10 min Grade Count:48

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	9.00 - 97.0	9.00 - 97.0	Average value: 60.5 Grade Count:30
Hardness, Shore D	34.0 - 91.0	34.0 - 91.0	Average value: 67.0 Grade Count:39
Tensile Strength, Ultimate	1.59 - 26.0 MPa	231 - 3770 psi	Average value: 9.34 MPa Grade Count:33
Film Tensile Strength at Yield, MD	20.0 - 30.0 MPa	2900 - 4350 psi	Average value: 26.0 MPa Grade Count:6
Film Tensile Strength at Yield, TD	16.0 - 70.0 MPa	2320 - 10200 psi	Average value: 30.5 MPa Grade Count:6

Tensile Strength, Yield Mechanical Properties	0.207 - 45.5 MPa Metric	30.0 - 6600 psi English	Average value: 17.0 MPa Grade Count:3
Film Elongation at Break, MD	65.0 - 207 %	65.0 - 207 %	Average value: 112 % Grade Count:3
Film Elongation at Break, TD	175 - 260 %	175 - 260 %	Average value: 203 % Grade Count:3
Film Elongation at Yield, MD	175 - 400 %	175 - 400 %	Average value: 278 % Grade Count:3
Film Elongation at Yield, TD	80.0 - 180 %	80.0 - 180 %	Average value: 123 % Grade Count:3
Elongation at Break	2.50 - 1300 %	2.50 - 1300 %	Average value: 332 % Grade Count:69
Elongation at Yield	2.00 - 5.00 %	2.00 - 5.00 %	Average value: 2.54 % Grade Count:16
Modulus of Elasticity	0.120 - 2.90 GPa	17.4 - 421 ksi	Average value: 1.54 GPa Grade Count:18
Flexural Yield Strength	4.00 - 75.0 MPa	580 - 10900 psi	Average value: 34.8 MPa Grade Count:41
Flexural Modulus	0.696 - 3.00 GPa	101 - 435 ksi	Average value: 1.50 GPa Grade Count:41
Resilience	33.0 - 43.0	33.0 - 43.0	Average value: 38.6 Grade Count:9
Secant Modulus, MD	0.696 - 1.32 GPa	101 - 191 ksi	Average value: 1.04 GPa Grade Count:7
Secant Modulus, TD	0.469 - 1.60 GPa	68.0 - 232 ksi	Average value: 0.899 GPa Grade Count:7
Izod Impact, Notched	0.198 J/cm - NB	0.371 ft-lb/in - NB	Average value: 0.346 J/cm Grade Count:27
Izod Impact, Notched (ISO)	2.30 kJ/m ² - NB	1.09 ft-lb/in ² - NB	Average value: 5.49 kJ/m ² Grade Count:15
	2.00 - 4.00 kJ/m ² @Temperature -30.0 - - 30.0 °C	0.952 - 1.90 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 2.96 kJ/m ² Grade Count:5
Charpy Impact Unnotched	1.30 J/cm ² - NB	6.19 ft-lb/in ² - NB	Average value: 5.12 J/cm ² Grade Count:16
	2.00 - 999.9 J/cm ² @Temperature -30.0 - - 30.0 °C	9.52 - 4759 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 3.94 J/cm ² Grade Count:7
Charpy Impact, Notched	0.200 - 1000 J/cm ²	0.952 - 4760 ft-lb/in ²	Average value: 1.55 J/cm ² Grade Count:16
	0.200 - 0.300 J/cm ² @Temperature -30.0 - - 30.0 °C	0.952 - 1.43 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 0.250 J/cm ² Grade Count:4
Dart Drop, Total Energy	0.600 - 22.0 J	0.443 - 16.2 ft-lb	Average value: 8.43 J Grade Count:10

Tear Strength Mechanical Properties	6.30 - 104 kN/m Metric	35.9 - 593 pli English	Average value: 34.6 kN/m Grade Count:20 Comments
Elmendorf Tear Strength MD	20.0 - 830 g	20.0 - 830 g	Average value: 300 g Grade Count:4
Elmendorf Tear Strength TD	25.0 - 339 g	25.0 - 339 g	Average value: 169 g Grade Count:4
Elmendorf Tear Strength, MD	0.0217 - 1.87 g/micron	0.550 - 47.5 g/mil	Average value: 0.575 g/micron Grade Count:5
Elmendorf Tear Strength, TD	0.0272 - 1.48 g/micron	0.690 - 37.5 g/mil	Average value: 0.518 g/micron Grade Count:5
Dart Drop Test	325 - 1000 g	0.717 - 2.20 lb	Average value: 519 g Grade Count:5
Compression Set	8.00 - 29.0 %	8.00 - 29.0 %	Average value: 21.2 % Grade Count:11
	40.0 - 43.0 %	40.0 - 43.0 %	Average value: 41.5 % Grade Count:2
	@Temperature 70.0 - 70.0 °C	@Temperature 158 - 158 °F	
	40.0 - 43.0 %	40.0 - 43.0 %	Average value: 41.5 % Grade Count:2
	@Time 79200 - 79200 sec	@Time 22.0 - 22.0 hour	
Film Tensile Strength at Break, MD	20.0 - 310 MPa	2900 - 45000 psi	Average value: 197 MPa Grade Count:3
Film Tensile Strength at Break, TD	90.0 - 350 MPa	13100 - 50800 psi	Average value: 180 MPa Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	72.0 - 75.0 µm/m-°C	40.0 - 41.7 µin/in-°F	Average value: 74.4 µm/m-°C Grade Count:5
CTE, linear, Transverse to Flow	72.0 µm/m-°C	40.0 µin/in-°F	Average value: 72.0 µm/m-°C Grade Count:4
Deflection Temperature at 0.46 MPa (66 psi)	62.0 - 82.0 °C	144 - 180 °F	Average value: 74.6 °C Grade Count:12
Deflection Temperature at 1.8 MPa (264 psi)	39.0 - 83.0 °C	102 - 181 °F	Average value: 66.5 °C Grade Count:34
Vicat Softening Point	35.0 - 99.0 °C	95.0 - 210 °F	Average value: 76.9 °C Grade Count:41
	88.0 - 91.0 °C	190 - 196 °F	Average value: 89.7 °C Grade Count:3
	@Temperature 120 - 120 °C	@Temperature 248 - 248 °F	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+13 ohm-cm	1.00e+13 ohm-cm	Average value: 1.00e+13 ohm-cm Grade Count:9
	1.00e+14 - 1.00e+15	1.00e+14 - 1.00e+15	Average value: 6.00e+14 ohm Grade

Surface Resistance Electrical Properties	Ωhm Metric	Ωhm English	Count:9 Comments
Dielectric Constant	2.50	2.50	Average value: 2.50 Grade Count:9
Dielectric Strength	80.0 - 140 kV/mm	2030 - 3560 kV/in	Average value: 116 kV/mm Grade Count:8
Dissipation Factor	0.000300 - 0.000800	0.000300 - 0.000800	Average value: 0.000550 Grade Count:5
Comparative Tracking Index	600 V	600 V	Average value: 600 V Grade Count:5

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