

Overview of materials for Acrylonitrile Butadiene Styrene (ABS), Stainless Steel Fiber Filled

Category : Polymer , Thermoplastic , ABS Polymer , Acrylonitrile Butadiene Styrene (ABS), Stainless Steel Fiber Filled

Material Notes:

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

| Physical Properties | Metric | English | Comments |
|-----------------------|------------------------|------------------------------------|---|
| Density | 1.00 - 1.51 g/cc | 0.0361 - 0.0546 lb/in ³ | Average value: 1.22 g/cc Grade Count:44 |
| Filler Content | 5.00 - 20.0 % | 5.00 - 20.0 % | Average value: 10.1 % Grade Count:10 |
| Water Absorption | 0.0100 - 0.500 % | 0.0100 - 0.500 % | Average value: 0.292 % Grade Count:21 |
| Additive Loading | 10.0 - 20.0 % | 10.0 - 20.0 % | Average value: 13.8 % Grade Count:4 |
| Linear Mold Shrinkage | 0.00300 - 0.0170 cm/cm | 0.00300 - 0.0170 in/in | Average value: 0.00566 cm/cm Grade Count:40 |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|-------------------|-----------------------|--|
| Hardness, Rockwell R | 80.0 - 112 | 80.0 - 112 | Average value: 100 Grade Count:3 |
| Tensile Strength, Ultimate | 27.6 - 45.0 MPa | 4000 - 6530 psi | Average value: 36.4 MPa Grade Count:28 |
| Tensile Strength, Yield | 32.4 - 50.3 MPa | 4700 - 7300 psi | Average value: 45.9 MPa Grade Count:18 |
| Elongation at Break | 1.00 - 10.0 % | 1.00 - 10.0 % | Average value: 4.01 % Grade Count:39 |
| Elongation at Yield | 1.80 - 4.00 % | 1.80 - 4.00 % | Average value: 2.58 % Grade Count:7 |
| Modulus of Elasticity | 2.21 - 3.10 GPa | 320 - 450 ksi | Average value: 2.66 GPa Grade Count:24 |
| Flexural Yield Strength | 8.96 - 89.6 MPa | 1300 - 13000 psi | Average value: 68.6 MPa Grade Count:41 |
| Flexural Modulus | 1.14 - 6.21 GPa | 165 - 900 ksi | Average value: 3.16 GPa Grade Count:42 |
| Izod Impact, Notched | 0.267 - 1.60 J/cm | 0.500 - 3.00 ft-lb/in | Average value: 0.534 J/cm Grade Count:35 |
| | 1.07 - 4.30 J/cm | 2.00 - 8.06 ft-lb/in | Average value: 2.12 J/cm Grade |

| Izod Impact, Unnotched Mechanical Properties | Metric | English | Count:30 Comments |
|---|-------------------------------|-----------------------------------|---|
| Izod Impact, Notched (ISO) | 4.00 - 7.50 kJ/m ² | 1.90 - 3.57 ft-lb/in ² | Average value: 6.13 kJ/m ² Grade Count:4 |
| Izod Impact, Unnotched (ISO) | 10.0 - 20.0 kJ/m ² | 4.76 - 9.52 ft-lb/in ² | Average value: 16.0 kJ/m ² Grade Count:3 |
| Charpy Impact Unnotched | 1.00 - 2.50 J/cm ² | 4.76 - 11.9 ft-lb/in ² | Average value: 1.70 J/cm ² Grade Count:4 |

| Thermal Properties | Metric | English | Comments |
|---|---------------------|-----------------------|--|
| CTE, linear | 66.0 - 84.6 μm/m-°C | 36.7 - 47.0 μin/in-°F | Average value: 81.3 μm/m-°C Grade Count:13 |
| CTE, linear, Transverse to Flow | 83.0 - 96.0 μm/m-°C | 46.1 - 53.3 μin/in-°F | Average value: 90.7 μm/m-°C Grade Count:3 |
| Deflection Temperature at 0.46 MPa (66 psi) | 85.0 - 107 °C | 185 - 225 °F | Average value: 97.1 °C Grade Count:14 |
| Deflection Temperature at 1.8 MPa (264 psi) | 54.4 - 141 °C | 130 - 285 °F | Average value: 97.3 °C Grade Count:29 |
| Flammability, UL94 | HB - V-0 | HB - V-0 | Grade Count:26 |

| Electrical Properties | Metric | English | Comments |
|-------------------------|-------------------------|-------------------------|--|
| Electrical Resistivity | 0.100 - 1.00e+10 ohm-cm | 0.100 - 1.00e+10 ohm-cm | Average value: 2.94e+8 ohm-cm Grade Count:35 |
| Surface Resistance | 1.00 - 1.00e+7 ohm | 1.00 - 1.00e+7 ohm | Average value: 363000 ohm Grade Count:43 |
| Static Decay | 0.100 - 2.00 sec | 0.100 - 2.00 sec | Average value: 1.38 sec Grade Count:20 |
| Shielding Effectiveness | 20.0 - 55.0 dB | 20.0 - 55.0 dB | Average value: 42.1 dB Grade Count:14 |

| Processing Properties | Metric | English | Comments |
|------------------------|------------------|-------------------|--|
| Processing Temperature | 210 - 260 °C | 410 - 500 °F | Average value: 232 °C Grade Count:5 |
| Melt Temperature | 180 - 260 °C | 356 - 500 °F | Average value: 229 °C Grade Count:19 |
| Mold Temperature | 38.0 - 93.3 °C | 100 - 200 °F | Average value: 69.8 °C Grade Count:22 |
| Drying Temperature | 70.0 - 95.0 °C | 158 - 203 °F | Average value: 81.2 °C Grade Count:20 |
| Moisture Content | 0.0200 - 0.100 % | 0.0200 - 0.100 % | Average value: 0.0893 % Grade Count:15 |
| Dew Point | -17.8 °C | 0.000 °F | Average value: -17.8 °C Grade Count:13 |
| | 68.9 - 103 MPa | 10000 - 15000 psi | Average value: 86.2 MPa Grade |

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