

Menzolit Menzolit[®] SMC 1800 Unsaturated Polyester UP

Category : Polymer , Thermoset , Polyester, TS , Thermoset Polyester Glass SMC

Material Notes:

SMC 1800 is for structural applications requiring extreme high mechanical properties and low weight. These compounds mould to parts focussing on mechanical strength for replacement of metals in order to reduce the weight by keeping other performance characteristics like stiffness , low thermal expansion and low shrinkage . Its resilient matrix properties make it highly suitable for applications challenging in fatigue and dynamic loads. Information Provided by Menzolit

Order this product through the following link:

http://www.lookpolymers.com/polymer_Menzolit-Menzolit-SMC-1800-Unsaturated-Polyester-UP.php

Physical Properties	Metric	English	Comments
Density	1.80 g/cc	0.0650 lb/in ³	ISO 1183
Water Absorption	<= 0.50 %	<= 0.50 %	ISO 62
Linear Mold Shrinkage	0.0011 cm/cm	0.0011 in/in	ISO 2577

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	160 MPa @Temperature 22.0 °C	23200 psi @Temperature 71.6 °F	25mm flat samples, compression moulded; ISO 527-4
Tensile Strength, Yield	160 MPa @Temperature 22.0 °C	23200 psi @Temperature 71.6 °F	25mm flat samples, compression moulded; ISO 527-4
Elongation at Yield	0.00 %	0.00 %	tensile rupture strain; ISO 527-4
Modulus of Elasticity	12.0 GPa	1740 ksi	25mm flat samples, compression moulded; ISO 527-4
Flexural Strength	380 MPa @Temperature 22.0 °C	55100 psi @Temperature 71.6 °F	25 mm wide 100 mm long, flat samples; ISO 14125
Flexural Modulus	15.0 GPa @Temperature 22.0 °C	2180 ksi @Temperature 71.6 °F	25 mm wide 100 mm long, flat samples; ISO 14125
Poissons Ratio	0.30	0.30	
Shear Modulus	4.62 GPa	670 ksi	Calculated
Charpy Impact, Notched	17.0 J/cm ²	80.9 ft-lb/in ²	ISO 179

Thermal Properties	Metric	English	Comments
CTE, linear	12.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	6.67 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ISO 11359-2
Specific Heat Capacity	1.10 J/g- $\text{Å}^\circ\text{C}$	0.263 BTU/lb- $\text{Å}^\circ\text{F}$	
Thermal Conductivity	0.700 W/m-K	4.86 BTU-in/hr-ft Å^2 - $\text{Å}^\circ\text{F}$	
Maximum Service Temperature, Air	140 $\text{Å}^\circ\text{C}$	284 $\text{Å}^\circ\text{F}$	
Deflection Temperature at 1.8 MPa (264 psi)	$\geq 200 \text{ Å}^\circ\text{C}$	$\geq 392 \text{ Å}^\circ\text{F}$	ISO 75-2
Minimum Service Temperature, Air	-40.0 $\text{Å}^\circ\text{C}$	-40.0 $\text{Å}^\circ\text{F}$	
Glass Transition Temp, Tg	150 $\text{Å}^\circ\text{C}$	302 $\text{Å}^\circ\text{F}$	ISO 11357-2
Flammability, UL94	HB @Thickness 3.00 mm	HB @Thickness 0.118 in	
Oxygen Index	24 %	24 %	ISO 4589-2

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+15 ohm-cm	1.00e+15 ohm-cm	IEC 60093
Surface Resistance	1.00e+12 ohm	1.00e+12 ohm	IEC 60093
Dielectric Constant	4.0	4.0	IEC 60250
Dielectric Strength	24.0 kV/mm	610 kV/in	IEC 60243-1
Dissipation Factor	0.010	0.010	IEC 60250
Comparative Tracking Index	600 V	600 V	IEC 60112

Processing Properties	Metric	English	Comments
Processing Temperature	145 - 155 $\text{Å}^\circ\text{C}$	293 - 311 $\text{Å}^\circ\text{F}$	Compression moulding, matched metal die

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