

## Menzolit Menzolit<sup>®</sup> SMC 0412 Unsaturated Polyester UP

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

### Material Notes:

SMC 0412 is a premium Class-A SMC for on-line painted conductive exterior body applications on cars. These compounds mould to parts with excellent surface quality and low surface conductivity for e-coating of on-line painted body panels. Therefore parts do not require priming with a conductive primer before e-coating. The moulded parts provide an excellent surface quality. Moulded parts comply with all regulations of the automotive industry including low C-emissions. Surface defects like waviness, fibre patterns and orange peel are not existent with this product. To achieve the highest surface quality, we recommend that tool surfaces are mirror polished. The excellent temperature resistance allows online painting at high bake temperatures (190- 200 Å°C). The parts show very good adhesion to paint or In Mould Coating (IMC). Because of its zero shrink properties warpage is eliminated and parts follow exactly the dimensions of the cold mould. Information Provided by Menzolit

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Menzolit-Menzolit-SMC-0412-Unsaturated-Polyester-UP.php](http://www.lookpolymers.com/polymer_Menzolit-Menzolit-SMC-0412-Unsaturated-Polyester-UP.php)

Physical Properties	Metric	English	Comments
Density	1.90 g/cc	0.0686 lb/in <sup>3</sup>	ISO 1183
Water Absorption	<= 0.50 %	<= 0.50 %	ISO 62
Linear Mold Shrinkage	-0.000500 cm/cm	-0.000500 in/in	ISO 2577

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	90.0 MPa @Temperature 22.0 Å°C	13100 psi @Temperature 71.6 Å°F	25mm flat samples, compression moulded; ISO 527-4
Tensile Strength, Yield	90.0 MPa @Temperature 22.0 Å°C	13100 psi @Temperature 71.6 Å°F	25mm flat samples, compression moulded; ISO 527-4
Elongation at Yield	1.5 %	1.5 %	tensile rupture strain; ISO 527-4
Modulus of Elasticity	11.0 GPa	1600 ksi	25mm flat samples, compression moulded; ISO 527-4
Flexural Strength	180 MPa @Temperature 22.0 Å°C	26100 psi @Temperature 71.6 Å°F	25 mm wide 100 mm long, flat samples; ISO 14125
Flexural Modulus	10.0 GPa @Temperature 22.0 Å°C	1450 ksi @Temperature 71.6 Å°F	25 mm wide 100 mm long, flat samples; ISO 14125
Compressive Yield Strength	100 MPa	14500 psi	ISO 14126

Poissons Ratio Mechanical Properties	0.30 Metric	0.30 English	Comments
Shear Modulus	4.20 GPa	609 ksi	in plane
Charpy Impact, Notched	8.00 J/cm <sup>2</sup>	38.1 ft-lb/in <sup>2</sup>	ISO 179

Thermal Properties	Metric	English	Comments
CTE, linear	10.0 Åµm/m-Å°C	5.56 Åµin/in-Å°F	ISO 11359-2
Specific Heat Capacity	1.10 J/g-Å°C	0.263 BTU/lb-Å°F	
Thermal Conductivity	0.700 W/m-K	4.86 BTU-in/hr-ftÅ²-Å°F	
Maximum Service Temperature, Air	165 Å°C	329 Å°F	
Deflection Temperature at 1.8 MPa (264 psi)	>= 200 Å°C	>= 392 Å°F	ISO 75-2
Minimum Service Temperature, Air	-40.0 Å°C	-40.0 Å°F	
Glass Transition Temp, Tg	200 Å°C	392 Å°F	ISO 11357-2
Flammability, UL94	HB @Thickness 3.00 mm	HB @Thickness 0.118 in	
Oxygen Index	22 %	22 %	ISO 4589-2
Glow Wire Test	750 Å°C	1380 Å°F	IEC 60695-2-12

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	140 - 160 Å°C	284 - 320 Å°F	Compression moulding, matched metal die

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