

## Menzolit Menzolit<sup>®</sup> HPC 1200 Unsaturated Polyester UP

Category : Polymer , Thermoset , Polyester, TS , Thermoset Polyester Glass Filled BMC

### Material Notes:

HPC 1200 is a special SMC for high strength applications. The glass level has been selected to combine mouldability with high strength and stiffness properties in orientation direction. The reinforcement is composed of chopped, randomly distributed glass fibers and additional unchopped, continuous and lengthwise oriented glass fibers. This results in high strength and stiffness along with the unidirectional fibers. The flowability in orientation direction is reduced. This orientation influences flow during moulding and the anisotropic material properties have to be kept in mind during part design and part moulding. Typical applications are load bearing components, for instance bumpers and power train substructures. Information Provided by Menzolit

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Menzolit-Menzolit-HPC-1200-Unsaturated-Polyester-UP.php](http://www.lookpolymers.com/polymer_Menzolit-Menzolit-HPC-1200-Unsaturated-Polyester-UP.php)

| Physical Properties               | Metric          | English                   | Comments |
|-----------------------------------|-----------------|---------------------------|----------|
| Density                           | 1.80 g/cc       | 0.0650 lb/in <sup>3</sup> | ISO 1183 |
| Water Absorption                  | <= 0.50 %       | <= 0.50 %                 | ISO 62   |
| Linear Mold Shrinkage             | -0.000300 cm/cm | -0.000300 in/in           | ISO 2577 |
| Linear Mold Shrinkage, Transverse | 0.0025 cm/cm    | 0.0025 in/in              | ISO 2577 |

| Mechanical Properties      | Metric                               | English                            | Comments  |
|----------------------------|--------------------------------------|------------------------------------|---|
| Tensile Strength, Ultimate | 298 MPa<br>@Temperature 22.0<br>Â°C  | 43200 psi<br>@Temperature 71.6 Â°F | 25mm flat samples, compression moulded; ISO 527-4 |
| Tensile Strength, Yield    | 298 MPa<br>@Temperature 22.0<br>Â°C  | 43200 psi<br>@Temperature 71.6 Â°F | 25mm flat samples, compression moulded; ISO 527-4 |
| Elongation at Yield        | 1.6 %                                | 1.6 %                              | tensile rupture strain; ISO 527-4                 |
| Modulus of Elasticity      | 22.0 GPa                             | 3190 ksi                           | 25mm flat samples, compression moulded; ISO 527-4 |
| Flexural Strength          | 655 MPa<br>@Temperature 22.0<br>Â°C  | 95000 psi<br>@Temperature 71.6 Â°F | 25 mm wide 100 mm long, flat samples; ISO 14125   |
| Flexural Modulus           | 24.0 GPa<br>@Temperature 22.0<br>Â°C | 3480 ksi<br>@Temperature 71.6 Â°F  | 25 mm wide 100 mm long, flat samples; ISO 14125   |
| Compressive Yield Strength | 350 MPa                              | 50800 psi                          | ISO 14126   |
| Poissons Ratio             | 0.30                                 | 0.30                               |   |

| Mechanical Properties  | Metric                 | English                   | Comments |
|------------------------|------------------------|---------------------------|----------|
| Charpy Impact, Notched | 25.7 J/cm <sup>2</sup> | 122 ft-lb/in <sup>2</sup> | ISO 179  |

| Thermal Properties                          | Metric                   | English                             | Comments       |
|---|--------------------------|-------------------------------------|----------------|
| CTE, linear                                 | 7.00 Åµm/m-Å°C           | 3.89 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-ft <sup>2</sup> -Å°F |                |
| Maximum Service Temperature, Air            | 170 Å°C                  | 338 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                   | 162 Å°C                  | 324 Å°F                             | ISO 11357-2    |
| Flammability, UL94                          | HB<br>@Thickness 3.00 mm | HB<br>@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 | 135 - 150 Å°C | 275 - 302 Å°F | Compression moulding, matched metal die |

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