

## Sumitomo Bakelite Durez® 29502 B Phenolic, Compression Grade

Category : Polymer , Thermoset , Phenolic , Phenolic, Novolac, Glass Filled

### Material Notes:

Durez 29502 B brown phenolic is a two stage, glass and mineral filled, special purpose molding material with improved mechanical and heat resistant properties. It is formulated for close tolerance applications such as disc brake pistons where good dimensional stability and compatibility with various automotive fluids are essential. This product can be ground to accurate finished dimensions. Information provided by Sumitomo Bakelite North America, Inc.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Sumitomo-Bakelite-Durez-29502-B-Phenolic-Compression-Grade.php](http://www.lookpolymers.com/polymer_Sumitomo-Bakelite-Durez-29502-B-Phenolic-Compression-Grade.php)

| Physical Properties   | Metric       | English                   | Comments   |
|-----------------------|--------------|---------------------------|------------|
| Density               | 2.10 g/cc    | 0.0759 lb/in <sup>3</sup> | ASTM D792  |
| Apparent Bulk Density | 1.00 g/cc    | 0.0361 lb/in <sup>3</sup> | ASTM D1895 |
| Water Absorption      | 0.030 %      | 0.030 %                   | ASTM D570  |
| Linear Mold Shrinkage | 0.0010 cm/cm | 0.0010 in/in              | ASTM D955  |

| Mechanical Properties      | Metric     | English        | Comments  |
|----------------------------|------------|----------------|-----------|
| Tensile Strength, Ultimate | 65.0 MPa   | 9430 psi       | ASTM D638 |
| Tensile Modulus            | 23.0 GPa   | 3340 ksi       | ASTM D638 |
| Flexural Yield Strength    | 114 MPa    | 16500 psi      |           |
| Compressive Yield Strength | 338 MPa    | 49000 psi      | ASTM D695 |
| Izod Impact, Notched       | 0.214 J/cm | 0.401 ft-lb/in | ASTM D256 |

| Thermal Properties                          | Metric                                                                               | English                                                                               | Comments  |
|---------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------|
| CTE, linear                                 | 15.0 $\mu\text{m/m-}^{\circ}\text{C}$<br>@Temperature 23.0 - 60.0 $^{\circ}\text{C}$ | 8.33 $\mu\text{in/in-}^{\circ}\text{F}$<br>@Temperature 73.4 - 140 $^{\circ}\text{F}$ |           |
| Deflection Temperature at 1.8 MPa (264 psi) | 204 $^{\circ}\text{C}$                                                               | 399 $^{\circ}\text{F}$                                                                | ASTM D648 |
| Glass Transition Temp, Tg                   | 280 $^{\circ}\text{C}$                                                               | 536 $^{\circ}\text{F}$                                                                |           |

| Electrical Properties  | Metric          | English         | Comments  |
|------------------------|-----------------|-----------------|-----------|
| Electrical Resistivity | 1.00e+12 ohm-cm | 1.00e+12 ohm-cm | ASTM D257 |
|                        | 5.0             | 5.0             |           |

| Dielectric Constant<br>Electrical Properties | Metric<br>@Frequency 1e+6 Hz | English<br>@Frequency 1e+6 Hz | ASTM D150<br>Comments   |
|----------------------------------------------|------------------------------|-------------------------------|-------------------------|
| Dielectric Strength                          | 11.8 kV/mm                   | 300 kV/in                     | Step by step; ASTM D149 |
|                                              | 13.8 kV/mm                   | 351 kV/in                     | Short Time; ASTM D149   |
| Dissipation Factor                           | 0.015<br>@Frequency 1e+6 Hz  | 0.015<br>@Frequency 1e+6 Hz   | ASTM D150               |

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