

## CeramTec Rubalit® 708S Alumina, 96%

Category : Ceramic , Oxide , Aluminum Oxide

### Material Notes:

Rubalit® 708S (96%) is an alumina that features high strength and thermal conductivity. It provides outstanding results when used on commercially available thick-film pastes and metallization systems.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_CeramTec-Rubalit-708S-Alumina-96.php](http://www.lookpolymers.com/polymer_CeramTec-Rubalit-708S-Alumina-96.php)

| Physical Properties | Metric       | English                  | Comments                            |
|---------------------|--------------|--------------------------|-------------------------------------|
| Density             | 3.78 g/cc    | 0.137 lb/in <sup>3</sup> | DIN EN 623-2 / ASTM-C373 / ASTM-C20 |
| Water Absorption    | 0.00 %       | 0.00 %                   | DIN EN 623-2 / ASTM-C373            |
| Particle Size       | 3.0 - 5.0 µm | 3.0 - 5.0 µm             | Median Grain (d50)                  |

| Mechanical Properties | Metric  | English   | Comments                                                                    |
|-----------------------|---------|-----------|-----------------------------------------------------------------------------|
| Tensile Modulus       | 340 GPa | 49300 ksi | Young's; DINV ENV 843-2 / ASTM-F417                                         |
| Flexural Strength     | 400 MPa | 58000 psi | Bending Strength; 4-Point Method (40x4x3 mm <sup>3</sup> ); ASTM-F417       |
|                       | 500 MPa | 72500 psi | Bending Strength; Dual Ring Method (0.63 mm Substrate Thickness); DIN 52292 |

| Thermal Properties     | Metric                      | English                           | Comments                 |
|------------------------|-----------------------------|-----------------------------------|--------------------------|
| CTE, linear            | 6.80 µm/m-°C                | 3.78 µin/in-°F                    |                          |
|                        | @Temperature 20.0 - 200 °C  | @Temperature 68.0 - 392 °F        |                          |
|                        | 7.30 µm/m-°C                | 4.06 µin/in-°F                    | ASTM-C373                |
|                        | @Temperature 20.0 - 600 °C  | @Temperature 68.0 - 1110 °F       |                          |
|                        | 8.00 µm/m-°C                | 4.44 µin/in-°F                    |                          |
|                        | @Temperature 20.0 - 1000 °C | @Temperature 68.0 - 1830 °F       |                          |
| Specific Heat Capacity | 0.800 J/g-°C                | 0.191 BTU/lb-°F                   |                          |
|                        | @Temperature 100 - 200 °C   | @Temperature 212 - 392 °F         | DINV ENV 821-3           |
| Thermal Conductivity   | 24.0 W/m-K                  | 167 BTU-in/hr-ft <sup>2</sup> -°F | DIN EN 821-2 / ASTM-C408 |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|--------|---------|----------|
| Al2O3                         | 96 %   | 96 %    |          |

| Electrical Properties | Metric                | English               | Comments                  |
|-----------------------|-----------------------|-----------------------|---------------------------|
| Volume Resistivity    | 1.00e+8 ohm-cm        | 1.00e+8 ohm-cm        |                           |
|                       | @Temperature 900 °C   | @Temperature 1650 °F  |                           |
|                       | 1.00e+12 ohm-cm       | 1.00e+12 ohm-cm       |                           |
|                       | @Temperature 500 °C   | @Temperature 932 °F   |                           |
|                       | 1.00e+13 ohm-cm       | 1.00e+13 ohm-cm       | ASTM-D257                 |
|                       | @Temperature 25.0 °C  | @Temperature 77.0 °F  |                           |
| Dielectric Constant   | 9.8                   | 9.8                   | IEC 672-1 / ASTM-C150     |
|                       | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz |                           |
|                       | 10                    | 10                    | IEC 672-1 / ASTM-C150     |
|                       | @Frequency 1.00e+9 Hz | @Frequency 1.00e+9 Hz |                           |
| Dielectric Breakdown  | 7000 V                | 7000 V                |                           |
|                       | @Thickness 0.250 mm   | @Thickness 0.00984 in |                           |
|                       | 12600 V               | 12600 V               |                           |
|                       | @Thickness 0.630 mm   | @Thickness 0.0248 in  |                           |
|                       | 15000 V               | 15000 V               |                           |
|                       | @Thickness 1.00 mm    | @Thickness 0.0394 in  |                           |
| Dielectric Loss Index | 0.00030               | 0.00030               | IEC 672-1 / ASTM-D149,150 |
|                       | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz |                           |

| Descriptive Properties                    | Value                        | Comments |
|-------------------------------------------|------------------------------|----------|
| Color                                     | White                        |          |
| Ra = Arithmetic Mean Roughness Value (µm) | Profilometer (0.8 mm Cutoff) |          |

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