

## Ceradyne Thermo-Sil® HS Fused Silica

Category : Ceramic , Oxide , Silicon Oxide

### Material Notes:

Fused Silica is an excellent thermal insulator with an extremely low coefficient of thermal expansion. It is excellent for thermal shock applications. The key characteristics of this material are: High Thermal Shock Resistance Radio wave, IR & Microwave Transparent

Information provided by Ceradyne Company

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Ceradyne-Thermo-Sil-HS-Fused-Silica.php](http://www.lookpolymers.com/polymer_Ceradyne-Thermo-Sil-HS-Fused-Silica.php)

| Physical Properties | Metric           | English                            | Comments |
|---------------------|------------------|------------------------------------|----------|
| Bulk Density        | 1.99 - 2.02 g/cc | 0.0719 - 0.0730 lb/in <sup>3</sup> |          |
| Water Absorption    | 8.0 - 10 %       | 8.0 - 10 %                         | ASTM C20 |
| Porosity            | 8.0 - 10 %       | 8.0 - 10 %                         | ASTM C20 |
| Crystallinity       | <= 1.0 %         | <= 1.0 %                           |          |

| Mechanical Properties | Metric              | English         | Comments  |
|-----------------------|---------------------|-----------------|-----------|
| Modulus of Elasticity | 37.2 GPa            | 5400 ksi        |           |
| Modulus of Rupture    | 0.0172 - 0.0200 GPa | 2.49 - 2.90 ksi | ASTM C133 |
| Flexural Strength     | 17.2 - 20.0 MPa     | 2490 - 2900 psi |           |
| Compressive Strength  | 48.3 - 51.7 MPa     | 7010 - 7500 psi | ASTM C133 |

| Thermal Properties     | Metric                                 | English                                             | Comments |
|------------------------|----------------------------------------|-----------------------------------------------------|----------|
| CTE, linear            | 0.600 $\mu\text{m/m-}^{\circ}\text{C}$ | 0.333 $\mu\text{in/in-}^{\circ}\text{F}$            |          |
|                        | @Temperature 20.0 $^{\circ}\text{C}$   | @Temperature 68.0 $^{\circ}\text{F}$                |          |
| Specific Heat Capacity | 0.630 J/g- $^{\circ}\text{C}$          | 0.151 BTU/lb- $^{\circ}\text{F}$                    |          |
|                        | @Temperature 800 $^{\circ}\text{C}$    | @Temperature 1470 $^{\circ}\text{F}$                |          |
|                        | 1.00 J/g- $^{\circ}\text{C}$           | 0.239 BTU/lb- $^{\circ}\text{F}$                    |          |
|                        | @Temperature 20.0 $^{\circ}\text{C}$   | @Temperature 68.0 $^{\circ}\text{F}$                |          |
| Thermal Conductivity   | 0.840 W/m-K                            | 5.83 BTU-in/hr-ft <sup>2</sup> - $^{\circ}\text{F}$ |          |
| Shrinkage              | 0.0 %                                  | 0.0 %                                               |          |
|                        | @Temperature 1100 $^{\circ}\text{C}$   | @Temperature 2010 $^{\circ}\text{F}$                |          |

| Optical Properties | Metric | English | Comments |
|--------------------|--------|---------|----------|
|--------------------|--------|---------|----------|

| Optical Properties | Metric | English | Comments ; thickness not quantified   |
|--------------------|--------|---------|---------------------------------------|
| UV Transmittance   | 90 %   | 90 %    | transparent; thickness not quantified |

**Contact Songhan Plastic Technology Co.,Ltd.**

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