

## M Cubed Technologies HSC-702 Aluminum-toughened Reaction Bonded Silicon Carbide

Category : Ceramic , Carbide , Ceramic Matrix Composite

### Material Notes:

High fracture toughness reaction bonded SiC. Used in applications that require both high wear and high impact resistance. Bullnoses, fan liners, hydrocyclone liners, etc. Information provided by M Cubed Technologies, Inc.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_M-Cubed-Technologies-HSC-702-Aluminum-toughened-Reaction-Bonded-Silicon-Carbide.php](http://www.lookpolymers.com/polymer_M-Cubed-Technologies-HSC-702-Aluminum-toughened-Reaction-Bonded-Silicon-Carbide.php)

| Physical Properties | Metric    | English                  | Comments  |
|---------------------|-----------|--------------------------|-----------|
| Density             | 3.02 g/cc | 0.109 lb/in <sup>3</sup> | ASTM C135 |

| Mechanical Properties | Metric                    | English                    | Comments                        |
|-----------------------|---------------------------|----------------------------|---------------------------------|
| Knoop Microhardness   | 1000<br>@Load 2.00 kg     | 1000<br>@Load 4.41 lb      | kg/mm <sup>2</sup> ; ASTM C1326 |
| Modulus of Elasticity | 330 GPa                   | 47900 ksi                  | ASTM E494                       |
| Flexural Strength     | 260 MPa                   | 37700 psi                  | ASTM C1161                      |
| Poissons Ratio        | 0.19                      | 0.19                       | ASTM E494                       |
| Fracture Toughness    | 5.50 MPa-m <sup>1/2</sup> | 5.01 ksi-in <sup>1/2</sup> | ASTM C1421                      |
| Shear Modulus         | 139 GPa                   | 20200 ksi                  | Calculated                      |

| Thermal Properties   | Metric                                     | English                                      | Comments   |
|----------------------|--------------------------------------------|----------------------------------------------|------------|
| CTE, linear          | 4.40 µm/m-°C<br>@Temperature 25.0 - 100 °C | 2.44 µin/in-°F<br>@Temperature 77.0 - 212 °F | ASTM E831  |
| Thermal Conductivity | 200 W/m-K                                  | 1390 BTU-in/hr-ft <sup>2</sup> -°F           | ASTM E1461 |

| Descriptive Properties | Value | Comments |
|------------------------|-------|----------|
| Matrix                 | Al-Si |          |
| Particle Reinforcement | SiC   |          |
| Vol. % Reinforcement   | 70    |          |

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