

## SINTRON™ - SILICON NITRIDE

SINTRON™ - Silicon Nitride offers exceptional wear, oxidation, thermal shock, and corrosion resistance, both impingement and frictional modes. This material provides high strength over a wide temperature range and can be formed into a variety of complex shapes with good tolerance control. SINTRON's high fracture toughness/ hardness and good chemical resistance works well in non-ferrous metals contact applications.

### Key Material Properties

| Mechanical                         | SI/Metric                | Imperial                                  |
|------------------------------------|--------------------------|---|
| Density                            | 3.29 gm/cc               | 205.4 lb/ft <sup>3</sup>                  |
| Porosity                           | 0%                       | 0%  |
| Color                              | Black                    | -   |
| Flexural Strength                  | 830 MPa                  | 120.4 lb/in <sup>2</sup> x10 <sup>3</sup> |
| Elastic Modulus                    | 310 MPa                  | 45 lb/in <sup>2</sup> x10 <sup>6</sup>    |
| Poisson's Ratio                    | 0.27                     | 0.27                                      |
| Hardness                           | 1580 Kg/mm <sup>2</sup>  | -   |
| Fracture Toughness K <sub>IC</sub> | 6.1 MPa•m <sup>1/2</sup> | -   |
| Maximum Use Temperature (no load)  | 1000 °C                  | 1830°F                                    |
| Thermal Conductivity               | 30 W/m•°K                | 208 BTU•in/ft <sup>2</sup> •hr•°F         |
| Coefficient of Thermal Expansion   | 3.3x10 <sup>-6</sup> /°C | 1.8x10 <sup>-6</sup> /°C                  |

