

| ITEM           |                                  |           | MATERIAL                               | Silicon Nitride                |
|----------------|----------------------------------|-----------|----------------------------------------|--------------------------------|
| Main Component |                                  |           |                                        | Si <sub>3</sub> N <sub>4</sub> |
|                | Density                          |           | g/cm <sup>3</sup>                      | 3.24                           |
| MECHANICAL     | Vickers Hardness Load 500g       |           | GPa                                    | 14.0                           |
|                | Flexural Strength                |           | MPa                                    | 760                            |
|                | Compressive Strength             |           | MPa                                    | 3900                           |
|                | Young's Modulus                  |           | GPa                                    | 300                            |
|                | Fracture Toughness               |           | Mpa M <sup>1/2</sup>                   | 6.5                            |
| THERMAL        | Coefficient of Thermal expansion | 40 ~ 400℃ | x 10 <sup>-6</sup> / °C                | 2.60                           |
|                |                                  | 40 ~ 800℃ |                                        | 3.20                           |
|                | Thermal Conductivity (20℃)       |           | W/(m·k)                                | 27                             |
|                | Specific Heater                  |           | J/(kg·K)                               | 0.65X10 <sup>3</sup>           |
|                | Thermal Shock Resistance (ΔT)    |           | °C                                     | 650                            |
| ELECTRICAL     | Dielectric Strength              |           | V/m                                    | 10X10 <sup>6</sup>             |
|                | Volume Resistivity               | 20℃       | Ω ·cm                                  | >10 <sup>14</sup>              |
|                |                                  | 300℃      | Ω ·cm                                  | 10 <sup>12</sup>               |
|                |                                  | 500℃      | Ω ·cm                                  | 10 <sup>10</sup>               |
| CHEMICAL       | Nitric Acid (60%, 90℃)           |           | Weight Loss<br>mg/cm <sup>2</sup> /day | 1.00                           |
|                | Sulphuric Acid (95%, 95℃)        |           |                                        | 0.40                           |
|                | Caustic Soda (30%, 80℃)          |           |                                        | 0.36                           |