

|   | PURE LINE<br>pure with high thermal performance |                     |                     | CLASSIC LINE<br>reliable and versatile |                          |                       | STRONG LINE<br>for high mechanical loadings |                       |                    |     |                    |     |                    |     |                    |     |
|---|---|---------------------|---------------------|--|--------------------------|-----------------------|---|-----------------------|--------------------|-----|--------------------|-----|--------------------|-----|--------------------|-----|
|   | HeBoSint®<br>PL 100*                            | HeBoSint®<br>PL 200 | HeBoSint®<br>PL 600 | HeBoSint®<br>CL 100                    | HeBoSint®<br>CL-Z 200    | HeBoSint®<br>CL-S 200 | HeBoSint®<br>SL-Z 100                       | HeBoSint®<br>SL-A 400 |                    |     |                    |     |                    |     |                    |     |
| <b>Binder</b>   | none  | none                | none                | Calcium Borate                         | none                     | none                  | none  | Calcium Borate        |                    |     |                    |     |                    |     |                    |     |
| <b>Composition</b>  | hBN   | hBN                 | hBN                 | hBN                                    | hBN+SiC+ZrO <sub>2</sub> | hBN+SiO <sub>2</sub>  | hBN+SiC+ZrO <sub>2</sub>                    | hBN+AlN               |                    |     |                    |     |                    |     |                    |     |
| <b>Typical Density [g/cm<sup>3</sup>]</b>   | 1.9   | 2.0                 | 1.95                | 1.9                                    | 2.3                      | 2.1                   | 2.9   | 2,45                  |                    |     |                    |     |                    |     |                    |     |
| <b>Direction Dependence</b>   | anisotropic                                     | anisotropic         | anisotropic         | anisotropic                            | anisotropic              | anisotropic           | anisotropic                                 | anisotropic           |                    |     |                    |     |                    |     |                    |     |
| <b>Thermal Properties</b>   |   |                     |                     |  |                          |                       |   |                       |                    |     |                    |     |                    |     |                    |     |
| <b>Pressing Direction</b>   |   | ⊥                   |                     | ⊥                                      |                          | ⊥                     |   | ⊥                     |                    | ⊥   |                    |     |                    |     |                    |     |
| <b>Specific Heat at 20 °C [J/gK]</b>  | 0.5   |                     | 0.8                 |  | 0.8                      |                       | 0.6   |                       | -                  |     |                    |     |                    |     |                    |     |
| <b>Thermal Conductivity at 20 °C [W/mK]</b>   | 20  | 30                  | 21                  | 29                                     | 23                       | 28                    | 33  | 35                    | 28                 | 45  | 10                 | 30  | 28                 | 38  | 65                 | 75  |
| <b>Thermal Expansion [10<sup>-6</sup>/K]<br/>RT - 1500 °C</b>   | 1.0   | 0.5                 | 1.0                 | 0.5                                    | 0.8                      | 0.4                   | 4.0   | 3.0                   | 4.5                | 3.0 | 3.0                | 0.1 | 8.0                | 4.0 | 5.6                | 5.4 |
| <b>Use Temperature max. at °C</b><br>- Oxidizing Atmosphere<br>- Inert Atmosphere / Vacuum Atmosphere | ~ 900<br>~ 2000                                 |                     | ~ 900<br>~ 2000     |  | ~ 900<br>~ 2000          |                       | ~ 900<br>~ 1500                             |                       | ~ 900<br>~ 1800    |     | ~ 900<br>~ 1500    |     | ~ 900<br>~ 1800    |     | ~ 900<br>~ 1600    |     |
| <b>Electrical and Mechanical Properties</b>   |   |                     |                     |  |                          |                       |   |                       |                    |     |                    |     |                    |     |                    |     |
| <b>Orientation of Platelets</b>   |   | ⊥                   |                     | ⊥                                      |                          | ⊥                     |   | ⊥                     |                    | ⊥   |                    | ⊥   |                    | ⊥   |                    | ⊥   |
| <b>Specific Electrical Resistivity [Ohm cm]</b>   | > 10 <sup>12</sup>                              |                     | > 10 <sup>15</sup>  |  | > 10 <sup>15</sup>       |                       | > 10 <sup>12</sup>                          |                       | > 10 <sup>12</sup> |     | > 10 <sup>14</sup> |     | > 10 <sup>12</sup> |     | > 10 <sup>15</sup> |     |
| <b>Bending Strength [MPa]</b>   | 8   | 10                  | 4                   | 6                                      | 17                       | 21                    | 35  | 40                    | 40                 | 70  | 35                 | 65  | 80                 | 120 | 80                 | 105 |
| <b>Young's Modulus [GPa]</b>  | 20  | 23                  | 12                  | 12                                     | 20                       | 50                    | 25  | 30                    | 20                 | 35  | 75                 | 85  | 30                 | 45  | 40                 | 60  |
| <b>Compressive Strength [MPa]</b>   | 23  | 22                  | 23                  | 23                                     | 50                       | 40                    | 60  | 52                    | 105                | 88  | 130                | 50  | 170                | 170 | 190                | 185 |

\* Discolorations can occasionally be seen in the material. This has no adverse effect on the material properties.

The data quoted in this leaflet are typical for the material. They are intended as a guide only and should not be used in preparing detailed specifications. Actual product data may deviate from the figures given. We reserve the right to alter product data within the scope of technical progress and new developments. Since processing involves factors that are beyond our control, recommendations made in this leaflet should be checked by preliminary trials, especially for third party applications. These recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, from clarifying the situation.

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