










## HeBoSint® CLASSIC LINE

Reliable and versatile

The **HeBoSint® CLASSIC LINE** is a convincing combination of good mechanical and thermal properties with a high efficiency level. This versatility makes the **CLASSIC LINE** ideal for a variety of different applications. The product portfolio includes high-quality casting nozzles for the metal industry, solder pads, welding nozzles and insulation frames for PVD coating systems. The good separation properties, the high thermal shock resistance and the very good electrical insulation effect ensure reliability in the production process in addition to guaranteeing a long service life for the components.

	HeBoSint® CL 100		HeBoSint® CL-Z 200		HeBoSint® CL-S 200	
<b>Binder</b>	Calcium Borate		none		none	
<b>Composition</b>	hBN		hBN+SiC+ZrO <sub>2</sub>		hBN+SiO <sub>2</sub>	
<b>Typical Density [g/cm<sup>3</sup>]</b>	1.9		2.3		2.1	
<b>Direction Dependence</b>	anisotropic		anisotropic		anisotropic	
<b>Thermal Properties</b>						
<b>Pressing Direction</b>		⊥		⊥		⊥
<b>Specific Heat at 20 °C [J/gK]</b>	0.6		0.6		0.8	
<b>Thermal Conductivity at 20 °C [W/mK]</b>	33	35	28	45	10	30
<b>Thermal Expansion [10<sup>-6</sup>/K] RT - 1500 °C</b>	4.0	3.0	4.5	3.0	3.0	0.1
<b>Use Temperature max. at °C</b> - Oxidizing Atmosphere - Inert Atmosphere - Vacuum Atmosphere	~ 900 ~ 1600 ~ 1600		~ 900 ~ 1800 ~ 1800		~ 900 ~ 1500 ~ 1500	
<b>Electrical and Mechanical Properties</b>						
<b>Orientation of Platelets</b>		⊥		⊥		⊥
<b>Specific Electrical Resistivity [Ohm cm]</b>	> 10 <sup>12</sup>		> 10 <sup>12</sup>		> 10 <sup>14</sup>	
<b>Bending Strength [MPa]</b>	35	40	40	70	35	65
<b>Young's Modulus [GPa]</b>	25	30	20	35	75	85
<b>Compressive Strength [MPa]</b>	60	52	105	88	130	50

-  Wear resistance
-  Purity
-  Low permeability
-  Electrically insulation
-  Thermal conductivity
-  Thermal shock resistance
-  Low thermal expansion
-  Non-wetting behavior
-  Mechanical 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.