

## Refractory Silicon Carbide Materials Data Sheet

Property	Units	NSiC	RSiC	Mammut-Wetro Foundry Crucibles	Fired Refractory & Mufflers & Vents
<b>Description</b>					
Nominal Composition		Si infiltrated SiC with 8—12% free Si	> 98.5% SiC	SiC, Si (40% to 60%) Graphite, Carbon (30% to 45%) Al <sub>2</sub> O <sub>3</sub> (3% - 10%)	SiC (62.3%) SiO <sub>2</sub> (5.63%) Al <sub>2</sub> O <sub>3</sub> (27.76%)
<b>Microstructure</b>					
Bulk Density	[g/cm <sup>3</sup> ]	3.0 ~ 3.1	3.1	2.0—2.2	2.53
Apparent Porosity	[vol%]	≤ 12 ~ 15	≤ 16	14% - 19%	2.59
<b>Colour</b>					
		Dark Grey	Dark Grey	Black	Black
<b>Mechanical Properties</b>					
Compressive Strength	[MPa]	≥ 600	≥ 600	-	-
Flexural (Bending) Strength	[MPa]	150 ~ 160	80 ~ 90	-	-
Young's Modulus E	[GPa]	250	240	-	-
Cold bending strength	[MPa]	-	-	13 ~ 20	-
Hot bending strength	[GPa]	-	-	10 ~ 15	-
<b>Thermal Properties</b>					
Max Working Temperature	[°C]	1600	1600	1400	1400
Thermal Conductivity @ 1200°C	[W/mK]	11	23	-	-
Thermal Shock Resistance (ΔT <sub>C</sub> )	[°C]	Very Good	Extremely Good	-	-
Thermal Expansion Coefficient	[x 10 <sup>-6</sup> /K]	-	-	-	4.4
Thermal Expansion Coefficient @ 1500°C	[x 10 <sup>-6</sup> /K]	4.6	4.7	-	-

**Note:** The above data represent typical values of Rojan Refractory Silicon Carbide.