



GNP Graystar

Specialty Materials

TECHNICAL DATA SHEET

Beta Silicon Carbide (β -SiC)

Typical Chemistry

Silicon Carbide (SiC)	97 - 99.99 %
Free Carbon (C)	0 - 0.30 %
Silicon Dioxide (SiO ₂)	0 - 1.20 %
Free Silicon (Si)	0 - 0.20 %
Iron (Fe ₂ O ₃)	0 - 0.30 %
Aluminum Oxide (Al ₂ O ₃)	< 0.03 %
Magnesium Oxide (MgO)	< 0.03 %
Calcium Oxide (CaO)	< 0.03 %

Physical Characteristics

Crystal Form:	Cubic (Beta SiC)
True Density:	3.21 g/cm ³
Melting Point:	Dissociates at Approx. 2500°C
Hardness:	Mohs: 9.5 - 9.75

Available Sizes (Microns)

Size	D50	D90	D100	Size	D50	D90	D100
W0.03	0.028	0.073	0.153	W1.5	1.26	1.55	1.87
W0.04	0.036	0.102	0.200	W2.5	1.91	2.46	3.30
W0.05	0.043	0.129	0.134	W3.5	2.99	3.44	4.90
W0.07	0.065	0.106	0.130	W5	4.23	5.28	6.50
W0.1	0.090	0.166	0.276	W7	5.74	7.31	9.36
W0.2	0.148	0.220	0.353	W10	7.57	10.38	13.89
W0.3	0.211	0.334	0.436	W14	10.12	14.06	19.31
W0.4	0.283	0.438	0.568	W20	14.74	21.24	26.83
W0.5	0.40	0.50	0.65	W28	22.61	27.80	32.15
W1	0.84	1.10	1.37	W40	37.56	41.34	45.13

Description:

GNP Graystar's Beta Silicon Carbide is a synthetic SiC with a cubic structure, like diamond, which gives it superior physical and chemical properties. Its Mohs hardness is second only to diamond's 10 on the Mohs scale. In addition to high hardness, β -SiC has good chemical stability, high thermal conductivity, low thermal expansion, wide band gap, high electro drift velocity, high electronic mobility, and special resistance temperature characteristics. Therefore, it has superior abrasion resistance, high temperature resistance, thermal shock resistance, radiation resistance, and semiconductive properties

Applications:

GNP Graystar's β -SiC is used in applications such as electronics, information technology, precision machining, military and aerospace, high-grade refractories, special ceramic materials, high-grade grinding materials, and reinforcing materials.

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