

# DATA SHEET SiC - UHP



General description : porous beta SiC, metallurgical grade

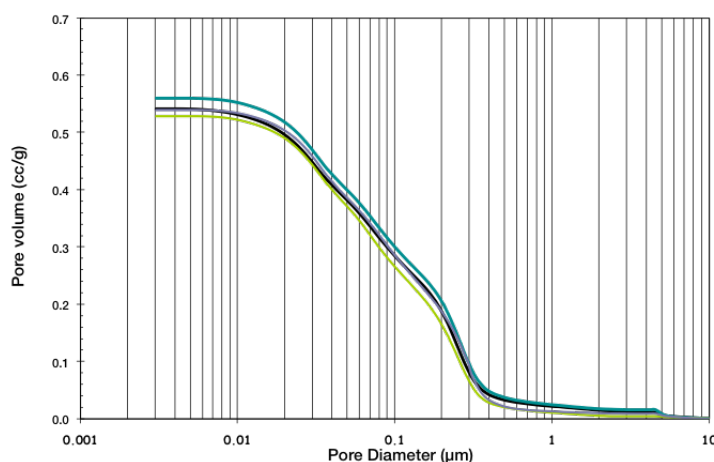
## Shape

Spheres - Ø : 2, 3, 4, 5 and 5.5 mm  
 Cylinders - Ø : 1, 2, 3, 4, 5 mm ; L : 2 - 5 mm  
 Trilobes - Ø : 1.5 mm  
 Rings - Ø<sub>ext</sub> : 8, 13 mm ; Ø<sub>int</sub> : 3, 4, 5, 6 mm



## SURFACE AREA - PORE SIZE DISTRIBUTION

BET Surface Area : 30 m<sup>2</sup>/g  
 Microporous Surface Area : < 5 m<sup>2</sup>/g  
 Pore Volume : 0.55 cc/g (measured by mercury porosimetry)



## Crushing Strength

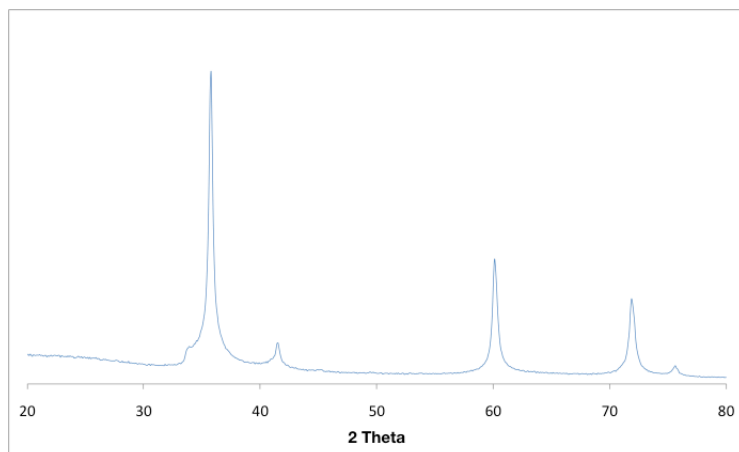
ASTM Methods 4149 and 6175

Shape	Mechanical Strength
Cylinders Ø : 2 mm	> 20 N/mm
Rings Ø : 8*5 mm	> 10 N/mm
Spheres Ø : 5.5 mm	260 N

## Impurities

Calculated from typical values in raw materials

## PHASE - XRD PATTERN



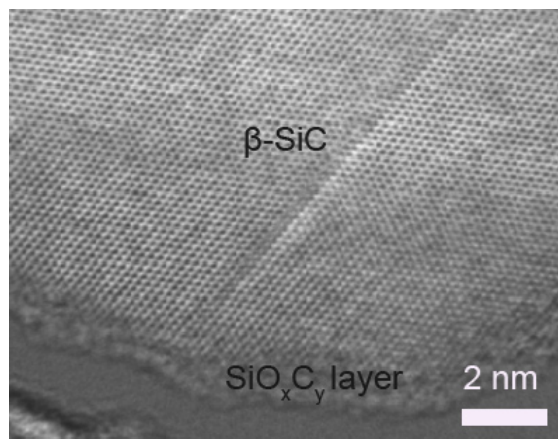
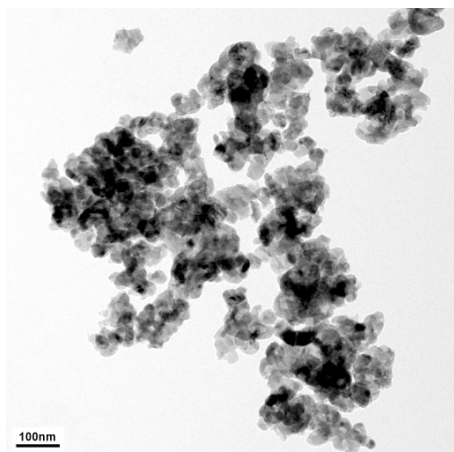
Element description	SiC UHP MAX. VALUES
Al	0.09%
P	18 ppm
S	0.03%
Cl	NA
K	NA
Ca	0.06 %
Ti	NA
V	21 ppm
Cr	67 ppm
Mn	0.01 %
Fe	0.31 %
Co	3 ppm
Ni	18 ppm
Cu	22 ppm
Zn	4 ppm
Sr	2 ppm
Zr	10 ppm



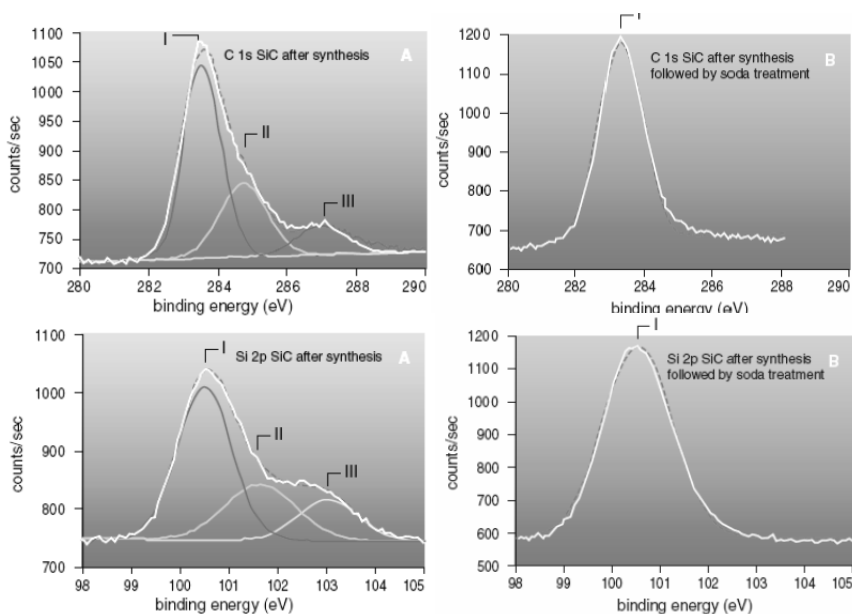


General description : surface characterization

## TEM Observation



## XPS Analysis



C 1s XPS spectra of SiC after synthesis (A) and after soda washing at 353 K (B). The different components observed after deconvolution are: (I) C in SiC, (II) C in SiOC, (III) C in species containing C-O or O-C-O functions.

Si 2p XPS spectra of SiC after synthesis (A) and after soda washing at 353 K (B). The different components observed after deconvolution are: (I) Si in SiC, (II) Si in SiOC, and (III) Si in SiO<sub>2</sub>.

## Surface acidity

**TPD isopropylamine** : Weak interaction between surface and amine, no Brønsted acidity; density of amine adsorption similar to SiO<sub>2</sub> (0.32 μmol/m<sup>2</sup> vs 0.36 μmol/m<sup>2</sup> for Aerosil - 150)

The surface of the SiC is comparable to the surface of silica allowing an easy active phase deposition by conventional techniques.

