

# CARBOREX

## Micro Grits and Sub-Micron Powders

Grains and Sub-Micron Powders for Abrasive and Ceramic Use

CARBOREX micro grits and sub-micron powders are high quality black and green silicon carbide grains manufactured by Washington Mills.

Washington Mills has the technical skills and advanced equipment to make sub-micron powders - in fact, we specialize in making materials to meet your exact specifications. Tell us what you're looking for in a material and we can manufacture to your exact technical specifications including: chemistry, particle size distribution, bulk density, and grain shape.

CARBOREX grits are manufactured and graded using the most sophisticated processes in order to ensure quality and consistency. Our unique process technology and new state-of-the-art microgrit facility allows us to carefully classify the grits to meet your requirements.

Known for its high hardness, outstanding high thermal conductivity, excellent chemical stability and hot strength, CARBOREX is used in a wide range of applications.

- Advanced Ceramics
- Molded ceramic shapes
- Coatings
- Slicing silicon wafers
- Composites
- Lapping
- Diesel particulate filters
- Refractories
- Grinding wheels
- Kiln furniture
- Armor
- Blasting



# Micro Grits and Sub-Micron Powders

## Technical Specifications

### Surface Chemical Values

Typical Standard

| Product             | Grits          | % SiC | % Free C | % Si | %SiO <sub>2</sub> | % Fe <sub>2</sub> O <sub>3</sub> |
|---------------------|----------------|-------|----------|------|-------------------|----------------------------------|
| <b>CARBOREX C-5</b> | F 240 – F 1200 | 99.0  | 0.25     | 0.25 | 0.30              | 0.05                             |
| (Green)             | 1200 / Finer   | 99.0  | 0.25     | 0.25 | 0.30              | 0.05                             |
| <b>CARBOREX C-6</b> | F 240 – F 1200 | 97.8  | 0.30     | 0.80 | 0.60              | 0.20                             |
| (Black)             | 1200 / Finer   | 95.0  | 0.70     | 0.30 | 3.00              | 0.4                              |

*Surface chemical values for finer sizes available upon request*

\*Chemical Analysis (in weight) according to FEPA 45-Gb-1986, R1993 resp. ISO 9286

### Typical Physical Properties

#### Hardness

Moh's Scale between 9 and 10

Knoop Scale 25.000 – 30.000 N/mm<sup>2</sup>

#### Thermal Conductivity

20° C 0.41 W/cm ° C

1000° C 0.21 W/cm ° C

#### Linear Thermal Expansion

25 - 1000° C 5.1 x 10<sup>-6</sup>/ ° C

25 - 2000° C 5.8 x 10<sup>-6</sup>/ ° C

#### Specific Heat

25° C 0.67 J/g ° C

1000° C 1.26 J/g ° C

Specific Density 3.21 g/cm<sup>3</sup>

Bulk Density 0.7 – 1.7 g/cm<sup>3</sup>

### 1200 / Finer Typical Particle Size Distribution (as measured on Malvern Mastersizer 2000)

Particle size distribution for other sizes is available upon request

#### Sub-Micron CARBOREX

Typical specific surface area: 14 m<sup>2</sup>/g

D10: 0.1125 μm D50: 0.4654 μm D90: 1.9261 μm

