SGL GROUP
THE CARBON COMPANY
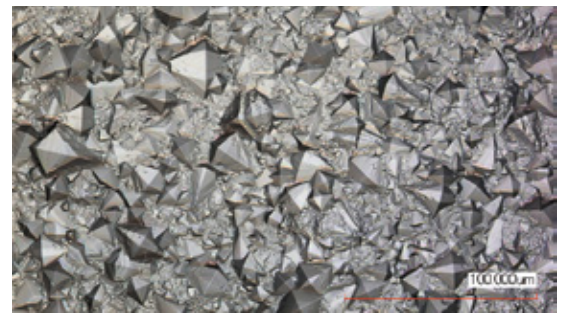
SIGRAFINE® SiC

Material: SiC
Application: Semiconductor, chemical, mechanical, industrial

SIGRAFINE® **is the new brand name** for our finegrain graphites, previously known under the names RINGSDORFF®, SIGRAFORM®, SIGRAMENT® and CRYSTA-SIL®.
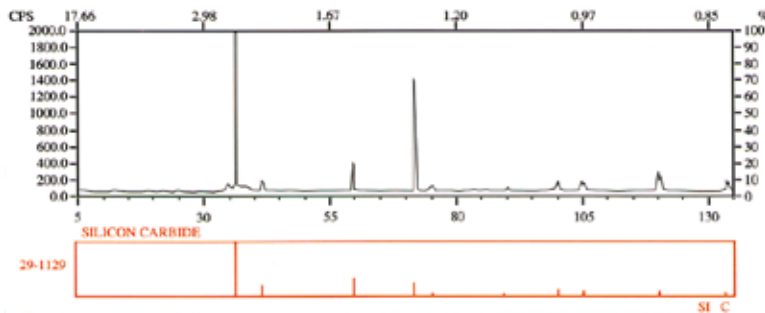
↑ *X-Ray diffraction pattern*

↑ *SiC microstructure*

Material data of our SIGRAFINE® SiC Coating

Typical properties	Units	Values	Analysis technique
Structure		Beta (cubic) 3C Polytype	XRD
Orientation	Fraction [%]	111 preferred	XRD
Density	g/cm³	3.2	XRD
Stoichiometry		1:1 Si/C	XPS
Hardness	GPa	40	Nanoindentation
Fracture toughness	MPa m$^{1/2}$	3.0	Vickers indenter
Coefficient of thermal expansion (100 – 600 °C)	10^{-6}/°C	4.3	Dilatometer
E-modulus	GPa	435	Nanoindentation
Typical film thickness	µm	100	Beta backscatter
Surface roughness	µm	2.5	Profilometer

Purity data of SIGRAFINE® SiC Coating
(glow discharge mass spectroscopy)

Elements	PPM by Wt
Sodium	< 0.05
Magnesium	< 0.01
Aluminum	< 0.04
Phosphorus	< 0.01
Sulfur	< 0.04
Potassium	< 0.05
Calcium	< 0.05
Titanium	< 0.005
Vanadium	< 0.001
Chromium	< 0.05
Manganese	< 0.005
Iron	< 0.01
Nickel	< 0.005
Copper	< 0.01
Zinc	< 0.05
Gallium	< 0.05
Germanium	< 0.05
Arsenic	< 0.005
Indium	< 0.01
Tin	< 0.01
Antimony	< 0.01
Tungsten	< 0.01
Tellurium	< 0.01
Lead	< 0.01
Bismuth	< 0.01

TDS SiC.02

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