neoDiam®-SC

Features and descriptions

neoCoat
Innovative CVD Diamond Solutions

High-quality single crystals of CVD diamond

High purity neoDiam® single crystals are excellent materials for high-performance technical applications

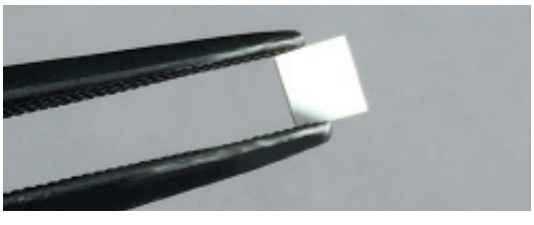
Beyond its aesthetic aspect, diamond is characterized by an unmatchable combination of outstanding properties such as: highest hardness, highest thermal conductivity at room temperature, broad transmission spectrum and high electronic mobility.

Thus, man-made single crystal diamond is today one the most suitable material for extreme performance in the most challenging environment.

Thanks to its state-of-the-art CVDiam® Microwave technology NeoCoat is able to grow high quality single crystal of diamond having different quality specifications.

Electronic Grade neoDiam®-SC

NeoCoat's high performance MWCVD system with dedicated deposition process and suitable seed pretreatment allow offering single crystal diamond with high quality, very low impurity content and low dislocation density.



Impurities	[N] < 5ppb
Crystallography	100% single sector <100>
Edge Orientation	<100>
Dimensions	3.0x3.0mm or 4.0x4.0mm
Laser cutting	Kerf < 5° Lateral dimensions : +/-50µm
Thickness	300 or 500µm +/- 50µm
Roughness	Ra < 10 nm on both sides
Thermal conductivity (300K)	~ 2000 $W.m^{-1}.K^{-1}$

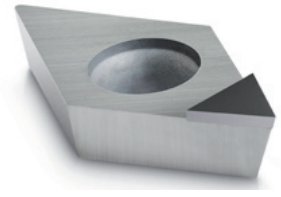
Other potential types of neoDiam®-SC

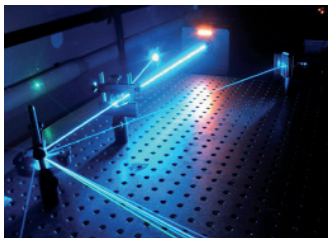
Beside high purity Electronic Grade ones, single crystals of diamond could be manufactured with various shapes and dimensions, but also with various chemical and physical specifications.

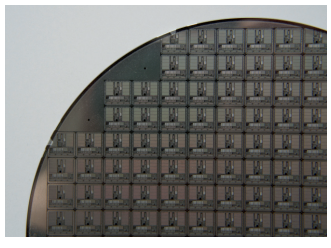
For example, single crystals of diamond could be produced with a higher nitrogen content for application in which the highest purity is not required, but it could also be doped with a low boron content for applications in which conductive single crystals of diamond are required.

Examples of neoDiam®-SC applications

- CVD diamond seeds for single crystal growth
- Radiation particle detectors
- High-power lasers (VCSELs)
- Quantum applications
- High power electronic devices
- High performance tools
- Jewelry based on Man-made-diamonds







neoCoat
WE GROW DIAMOND

Eplatures-Grise 17
2300 La Chaux-de-Fonds
Switzerland
www.neocoat.ch

info@neocoat.ch
T +41 32 930 29 40
F +41 32 534 94 91