

## Product Datasheet

### Graphenea Monolayer Graphene film on 300 nm Si/SiO<sub>2</sub>

#### Graphene Film

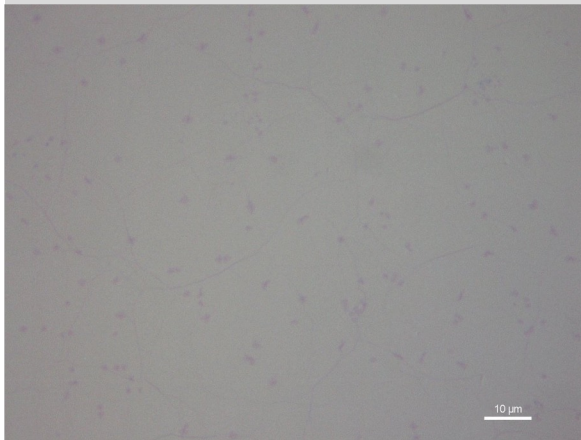
Growth Method	CVD synthesis
Transfer Method	Clean transfer method
Quality Control	Optical Microscopy & Raman checked
Appearance (Color)	Transparent
Transparency	>97%
Appearance (Form)	Film
Coverage	>95%
Number of graphene layers	1
Thickness (theoretical)	0.345 nm
AFM Thickness (air @RT)	<1nm
Electron Mobility on SiO <sub>2</sub> /Si	≈1500 cm <sup>2</sup> /V·s
Sheet Resistance on SiO <sub>2</sub> /Si (Van der Pauw)	450±40 Ohms/sq. (1cm x 1cm)
Grain size	Up to 20 μm

#### Substrate

##### SiO<sub>2</sub>/Si

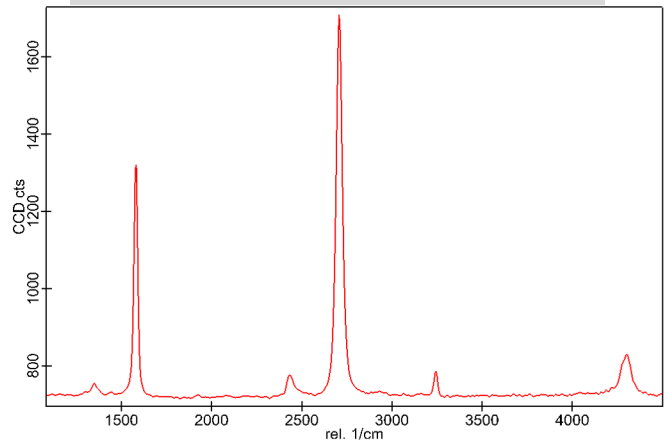
Type/Dopant	P/Bor
Orientation	<100>
Growth Method	CZ
Resistivity	1-10 ohm·cm
Thickness	525 +/- 20 μm
Front Surface	polished
Flats	2 SEMI
Coating	300 nm thermal oxide on one side
Dielectric Constant of the SiO <sub>2</sub> layer	3.9

### Optical Microscopy



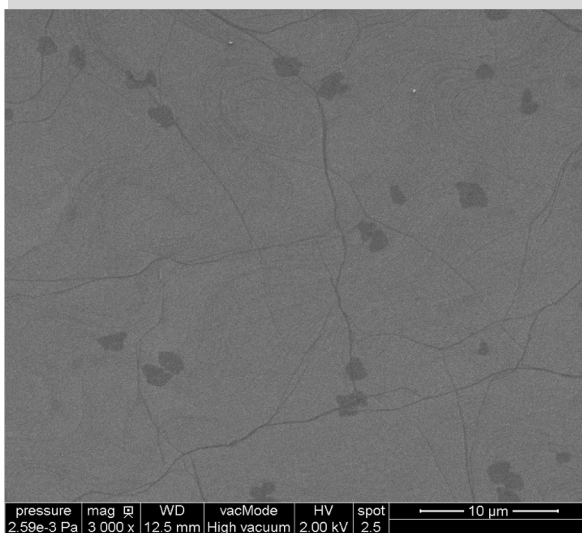
Monolayer Graphene on 300nm SiO<sub>2</sub>/Si

### Raman Spectrum



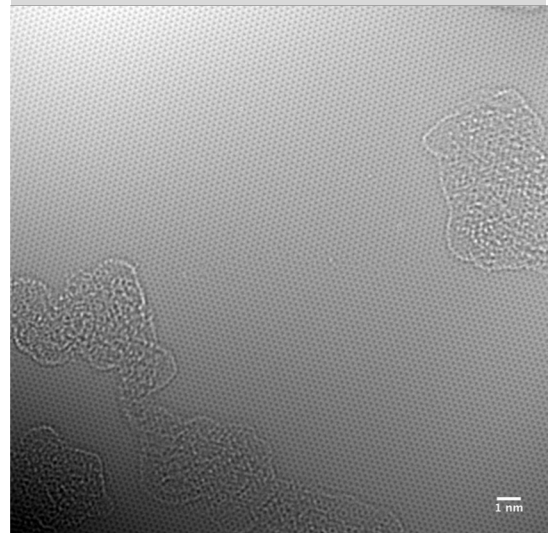
- Monolayer Graphene on 90nm SiO<sub>2</sub>/Si
- Measured with 453nm laser wavelength on a substrate with 1-100 Ohm cm resistivity
- I(G)/I(2D)<1
- I(D)/I(G)<0.1

### SEM image



Monolayer Graphene on 300nm SiO<sub>2</sub>/Si

### HRTEM image



Suspended graphene on TEM grids