

PureGRAPH®

Graphene nanoplatelet additives

Function

PureGRAPH® is designed for inclusion in polymer and cement composites to provide performance enhancements.

Description



PureGRAPH® graphene powders are characterised by their large platelet size, high aspect ratio and low defect levels. Four product grades are available in lateral sizes¹ ranging from 5µm to 50µm with tightly controlled geometries. The powders are readily dispersed in a range of solvent and polymer media. Batch to batch consistency is ensured through leading edge quality control testing.

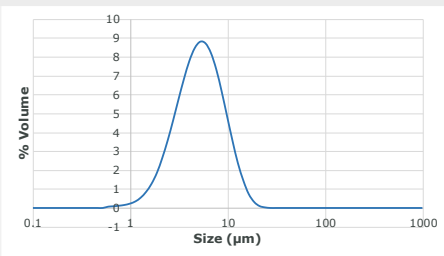
Typical Applications

FRP composites, elastomers, plastics, coatings, textile materials, energy storage and concrete. Enhanced fire retardancy of polymer composites.

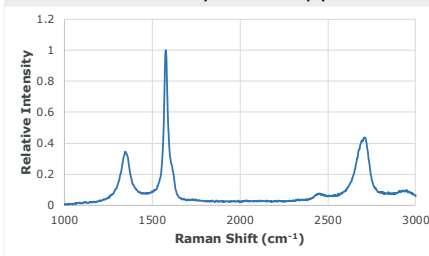
PureGRAPH® 5

$D_{V50}=5\ \mu\text{m}$ | Sheet Resistance³ = <10 Ohm/square | Tapped Density⁴ = 0.062 gcm⁻³

Particle Size Distribution¹



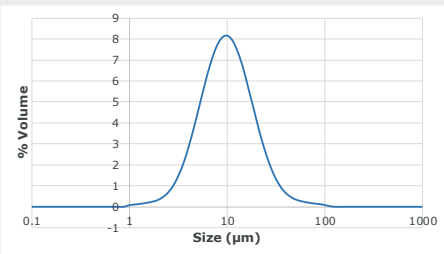
Raman Spectroscopy²



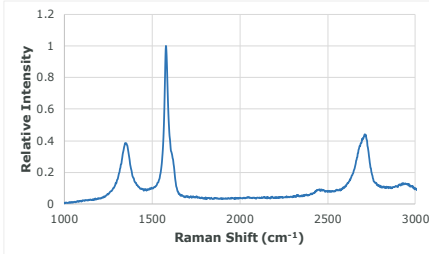
PureGRAPH® 10

$D_{V50}=10\ \mu\text{m}$ | Sheet Resistance³ = <10 Ohm/square | Tapped Density⁴ = 0.124 gcm⁻³

Particle Size Distribution¹



Raman Spectroscopy²



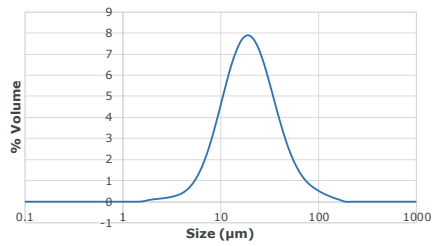
Features and Benefits:

- Easy to use and disperse readily in a wide range of solvents, polymer resins, elastomers and water-based formulations.
- Highest purity raw materials and defect free graphene platelets.
- Non-aggregated, easy to disperse powders, which enables significant performance enhancements of many polymer composites.
- Highest performing graphene additives available in tonnage volumes.

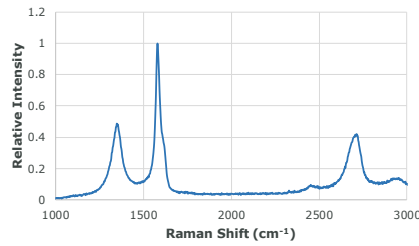
PureGRAPH® 20

D_{V50}=20 µm | Sheet Resistance³ = <10 Ohm/square | Tapped Density⁴ = 0.251 gcm⁻³

Particle Size Distribution¹

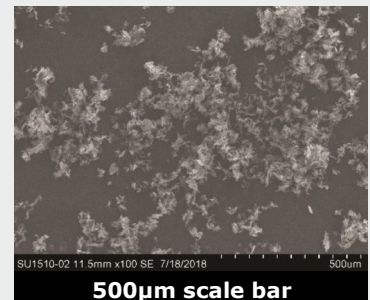
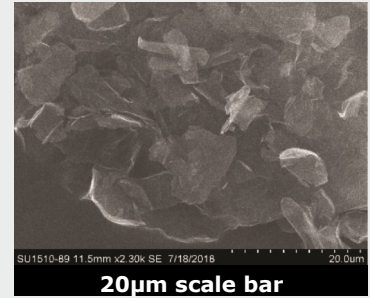


Raman Spectroscopy²



SEM Analysis

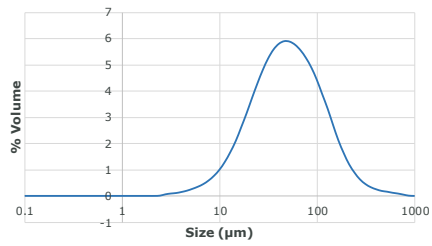
Typical SEM analysis of PureGRAPH® 20 powders showing non-aggregated, uniform sized graphene nanoplatelets.



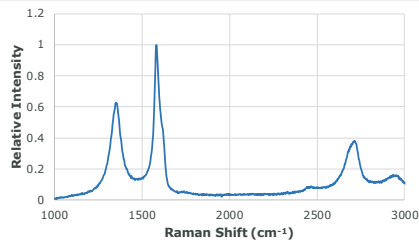
PureGRAPH® 50

D_{V50}=50 µm | Sheet Resistance³ = <10 Ohm/square | Tapped Density⁴ = 0.395 gcm⁻³

Particle Size Distribution¹



Raman Spectroscopy²



Typical Product Parameters

PureGRAPH®	5	10	20	50
Graphene particle size (D _{V50})	5 µm	10 µm	20 µm	50 µm

Availability & Packaging

Samples: 50g - 500g supplied in screw cap containers
Bulk volume: Sealed foil bags packed in boxes.

Shelf Life & Storage

PureGRAPH® additives can be stored for up to 2 years from the pack date, subject to packaging remaining sealed and unopened. It is advised that products are kept sealed and stored in cool, dry conditions.

Handling Information

Please consult material safety data sheet (MSDS) for additional handling information.

1 D_{V50} measured by a laser diffraction technique.

2 Raman analysis is a large area average using confocal Raman microscope as per ISO/TS 21356-1:2021. The D and G peaks are representative of intercalated graphene platelets that can be easily dispersed.

3 Four-point probe measurement of a 25 µm film collected on membrane filter.

4 According to ASTM D7481.

LIMITED WARRANTY INFORMATION:

The information contained herein is offered in good faith and is believed to be accurate at the time of printing. This information should not be used as a substitute for your own quality control and/or testing procedures to ensure that our products are safe, effective and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

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