

**PureGRAPH® AQUA** Pre-dispersed graphene additives

**Function** PureGRAPH® AQUA is designed for inclusion in dispersions, emulsions, latex formulations, coatings and construction materials to provide performance enhancements.

**Description** PureGRAPH® AQUA is a few-layer graphene additive that is pre-dispersed in water and supplied as a paste for easy formulation into water and polar solvent based formulations.



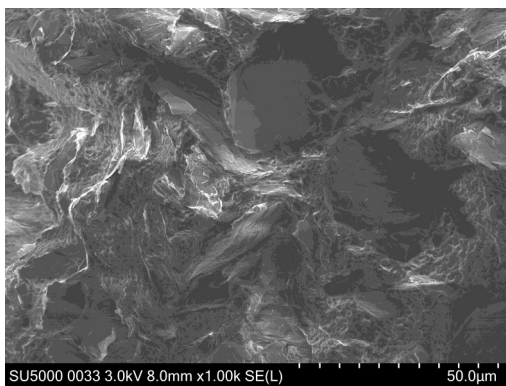
Available in lateral sizes<sup>1</sup> ranging from 5 microns to 50 microns providing flexible solutions for customer formulations.

**Potential Features and Benefits:**

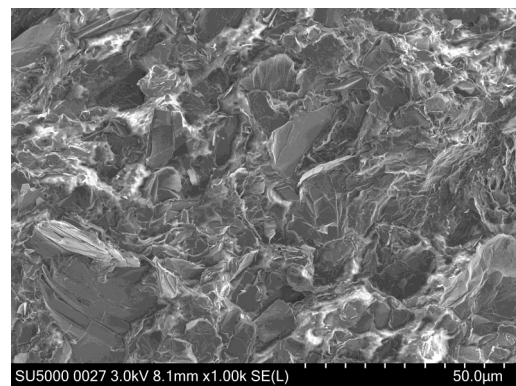
- Easy to use and mix in water and solvent based dispersions including paints, latex and cement-based composites.
- Easy to handle paste with high bulk density.
- Excellent dispersion of graphene nanoplatelets for improved mechanical performance, abrasion resistance, anti-corrosion, fire-retardancy and thermal & electrical conductivity.

**Typical Applications** Paints, inks, latex, polymer composites and cement composites

**SEM Analysis** Scanning Electron Microscopy (SEM) imaging<sup>2</sup> confirms improved dispersion of the PureGRAPH® AQUA platelets in a latex polymer.



**30% w/w graphene powder dispersed in latex**



**30% w/w PureGRAPH® AQUA graphene dispersed in latex**

Independent testing at the National Physical Laboratory<sup>3</sup>, UK confirms that improved dispersion of graphene nanoplatelets is achieved with PureGRAPH® AQUA.

## Typical Product Parameters

PureGRAPH® AQUA	5-20	10-20	20-20	50-20
Graphene particle size (D50)	5 µm	10 µm	20 µm	50 µm
Composition % w/w	20%	20%	20%	20%

### Example of Use: Improved Strength in Cement Composites

PureGRAPH® AQUA is dispersed into the admixture or water prior to mixing with the cement, sand and aggregates, similar to any typical reagent or additive. A good level of dispersion is required to maximise performance.

Dosage:

% graphene solids loading subject to formulation typically:

- 0.02% w/w of total mortar wet mix
- 0.01% w/w of total concrete mix, including aggregates

For further information and guidance please refer to our technical article, [Graphene Enhanced Concrete](#).

### Availability & Packaging

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

### Storage

It is advised that products are kept sealed and stored in cool conditions.

### Handling Information

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

1 D<sub>50</sub> volumetric average, measure by a laser diffraction technique.

2 SEM analysis performed in the First Graphene laboratories at the GEIC, The University of Manchester.

3 Analysis carried out in collaboration with the NPL under M4R programme September 2020.

#### 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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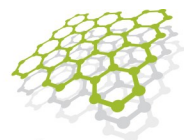
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