



TECHNICAL DATASHEET

PRODUCT CODE: G-LEAF Coating 00001

PRODUCT DESCRIPTION

Resin-free concentrated additive consisting in sterically stabilized BeDimensional's Few-Layer Graphene (FLG) dispersed in water, specifically designed to provide functionalities to waterborne systems. Its highly engineered formulation allows for a high dispersibility in compatible systems, even at low shear rates.

It can be used for the formulation of functional and smart paints & coatings, textile finishing and/or solution-processed polymer compounding. It is particularly recommended when both mechanical strength and thermal/electrical conductivity are required.

FUNCTIONAL ADDITIVES:

G-LEAF FEW-LAYER GRAPHENE (FLG)*

APPLICATIONS

- Heat-dissipating coatings and films
- Anti-static/dissipative coatings and films
- Aging protective coatings for different substrates
- Anti-abrasion coatings
- Other uses where thermal management and/or substrate protection are required
- Other uses where electrical conductivity is required

BENEFITS

- Low product dosages enable significant improvements in one or multiple functionalities
- The product ensures plain compatibility with common waterborne polymer dispersions
- It ensures a straightforward ease of processing and integration in industrial processes and products
- It does not change the chemical and thermal stability of the host matrix, while maintaining or even improving its mechanical performances
- The as-formulated product improves the processability of graphene compared to the direct use of graphene dried powder, enhancing functional performances of the polymeric composites

MATERIAL PROPERTIES

PHYSICAL PROPERTY	METHOD	VALUE/DESCRIPTION	UNITS
APPEARANCE	Visual	Dark grey dispersion	-
G-LEAF FLG CONCENTRATION	TGA	10 ± 0.5	wt%
DENSITY	ASTM D1475	1.0 – 1.1	g/cm ³
FINENESS OF GRIND	ASTM D1316	< 10	µm

*Produced by BeDimensional and compliant with **ISO/TS 80004-13:2017** and **ISO/TS 21356-1:2021**



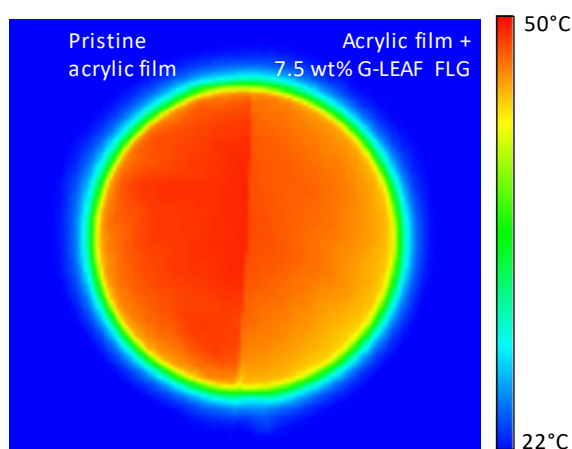
TYPICAL FORMULATION

G-LEAF Coating 00001 can be used in waterborne mono- or multi-component systems.

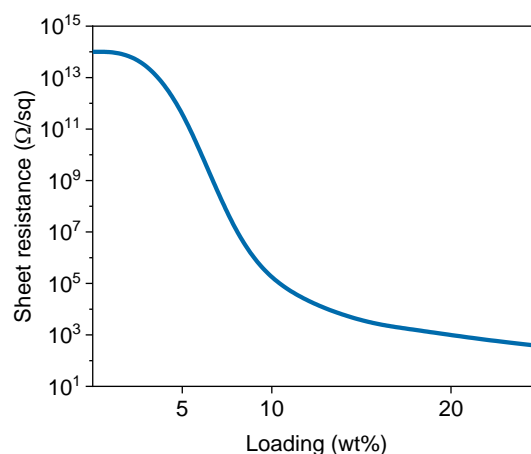
Depending on the characteristics of the host matrix and the processing conditions, the loading of the product for thermal and protective applications can be as low as 1-20 wt% relatively to the total formulation. Suggested loadings of the product for a charge dissipation effect fall in the range of 5-50 wt% relatively to the total formulation.

The above recommended levels can be used for orientation. Optimal levels and compatibility with the host system must be determined through a series of laboratory tests and depend on the solid content of the host system itself.

For optimum performance, the product must be homogenized *via* mechanical stirring and/or agitation before use and after incorporation in the host matrix. Mixing with silicone-based additives is not recommended.



Thermal management properties of 30 μm-thick films produced by depositing an acrylic copolymer waterborne dispersion before (left) and after the addition of 7.5 wt% G-LEAF FLG relative to the dry coating/film weight (right).



Sheet resistance measured for 30 μm-thick films produced by depositing an acrylic copolymer waterborne dispersion as a function of the loading of G-LEAF FLG relative to the dry coating/film weight.

STORAGE

The product must be stored in accordance with national regulations. Keep the containers in a dry, cool, well-ventilated space and away from sources of heat and ignition. Containers must be kept tightly closed. Handle with care.

The product is available in 125 g, 250 g, 500 g and 1000 g plastic containers.

SAFETY PRECAUTIONS

Comply with all local safety, disposal and transportation regulations. Check the Safety Data Sheet (SDS) and label of the individual products carefully before using the products. The SDS are available on request.

TECHNICAL SUPPORT

Contact us regarding any questions, improvement suggestions, or problems with this product. More information can be found at www.bedimensional.com or upon request.

DISCLAIMER

Data, specifications, directions and recommendations given in this data sheet represent test results or experience obtained under controlled or specially defined circumstances. Their accuracy, completeness or appropriateness under the actual conditions of any intended use is not guaranteed and must be determined by user.

BeDimensional cannot guarantee anything but the quality of the product itself. Minor product variations may be implemented in order to comply with specific requirements. BeDimensional reserves the right to change the given data without further notice.

Users should always consult BeDimensional for specific guidance on the general suitability of this product for their needs and specific application practices.

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