



TECHNICAL DATASHEET

PRODUCT CODE: B-LEAF Coating 11401

PRODUCT DESCRIPTION

Resin-free concentrated additive consisting in sterically stabilized BeDimensional's Few-Layer hexagonal Boron Nitride (*h*-BN) dispersed in propylene glycol methyl ether acetate, specifically designed to provide functionalities to medium polarity solvent-borne 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, thermal conductivity, electrical insulation, and barrier properties are required.

FUNCTIONAL ADDITIVES:

B-LEAF FEW-LAYER HEXAGONAL BORON NITRIDE (*h*-BN)

APPLICATIONS

- Heat-dissipating coatings and films
- Electrically insulating coatings and films
- Barrier coatings and films
- Aging and corrosion protective coatings for different substrates
- Anti-abrasion coatings
- Other uses where thermal management and/or substrate protection are required

BENEFITS

- Low product dosages enable significant improvements in one or multiple functionalities
- The product ensures plain compatibility with common medium polarity solvent-borne systems
- Its white colour makes the loaded system easily pigmentable
- 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 *h*-BN compared to the direct use of *h*-BN dried powder, enhancing functional performances of the polymeric composites

MATERIAL PROPERTIES

PHYSICAL PROPERTY	METHOD	VALUE/DESCRIPTION	UNITS
APPEARANCE	Visual	White dispersion	-
B-LEAF <i>h</i> -BN CONCENTRATION	TGA	10 ± 0.5	wt%
DENSITY	ASTM D1475	1.0 – 1.1	g/cm ³
FINENESS OF GRIND	ASTM D1316	< 20	µm



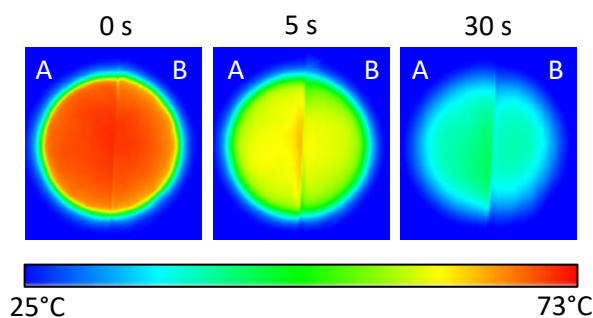
TYPICAL FORMULATION

B-LEAF Coating 11401 can be used in medium polarity solvent-borne mono- or multi-component systems.

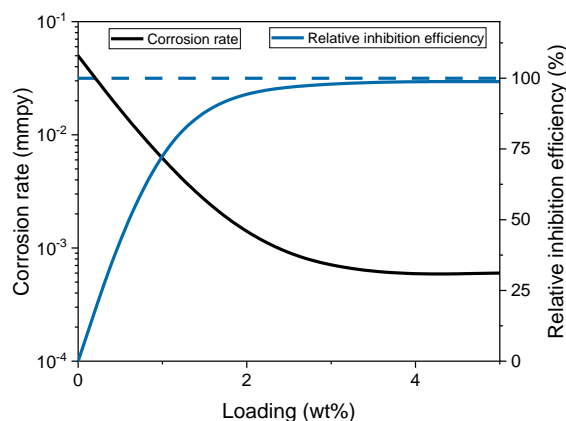
Depending on the characteristics of the host matrix and the processing conditions, the loading of the product for thermal and protective applications can be as low as 1-20 wt% relatively to the total formulation. An excessively high loading of the product can produce detrimental effects when corrosion protection is required because of pore introduction.

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.



Thermal management properties at different cooling time of 50 μm-thick films deposited from an acrylic 2K solvent-borne paint before (A) and after (B) the addition of 1 wt% B-LEAF h-BN relative to the dry coating/film weight.



Corrosion performance of a structural steel coated with a 100 μm-thick acrylic solvent-borne paint as a function of the loading of B-LEAF h-BN relative to the dry coating. No other corrosion protective additives/pigments were used in the tests.

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 steel 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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