

Graf-X™ Graphene Nanoplatelet Additives

TECHNICAL DATA SHEET 615

Product Overview

Graf-X™ graphene nanoplatelets are bulk powder additives specially designed to enhance product performance in markets and applications, including:

- Building and Construction - Concrete admixtures, foams, insulation, resins
- Composites and Textiles - Thermoplastics, polymer films, thermosets, conductive yarns
- Coatings, Adhesives, Sealants and Elastomers (CASE) - Waxes, liquid/powder coatings, additive manufacturing consumables
- Energy Storage - Batteries

Graf-X graphene nanoplatelets can enhance:

- Mechanical strength
- Electrical conductivity
- Thermal properties
- Barrier properties

Available grade is summarized below and vary with particle size. Customized particle sizing, purity, and surface area are available upon request.

Typical Properties*

CHARACTERISTIC	Unit	Graf-X™ GNP-1000
Specific Surface Area ^[1]	m ² /g	15-20
Purity (Carbon Content) ^[2]	%	99+
Average Lateral Dimension ^[3]	µm	10, 20, 40
Scott Density ^[4]	g/cm ³	0.05-0.09
Oxygen Content ^[5]	%	0.2-0.3
Number of Graphene Layers ^[6]		<200

Product Naming Convention

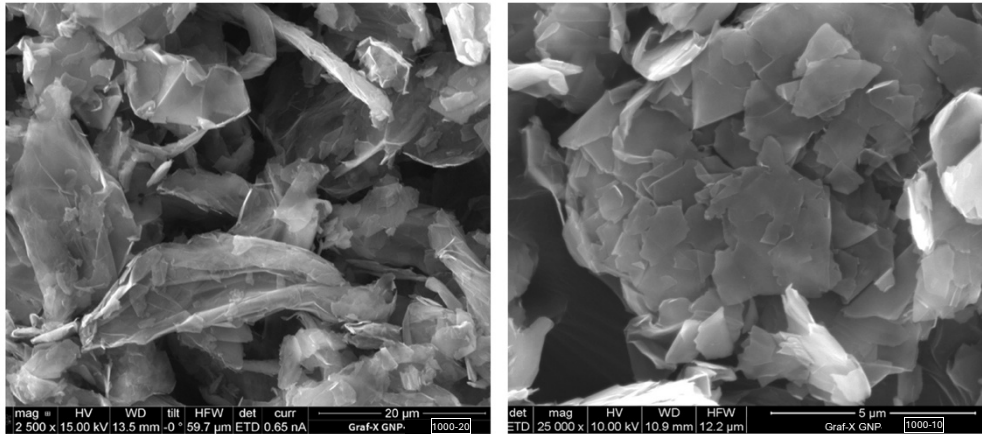
Example: GNP-1000-20

GNP	—	1000	—	20
Graphene Nanoplatelets		Series		20µm Lateral Dimension

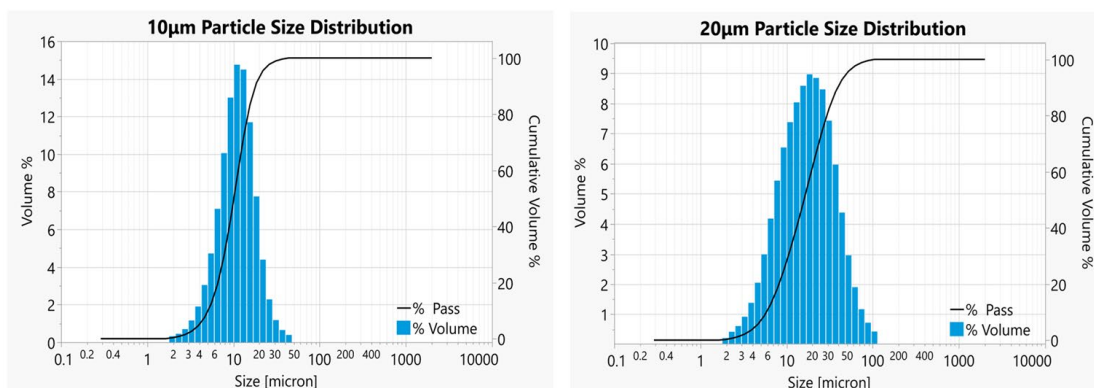
Graf-X™ Graphene Nanoplatelet Additives

Graf-X™ graphene nanoplatelets are available as dry powders. Samples are typically provided in the range of 50g-1kg, with the Graf-X™ GNP-1000- (10, 20, 40-micron) grades available in metric ton (MT) quantities. NeoGraf Solutions application engineers are available to discuss appropriate grade selections and loading levels for each application. Grades may be available as dispersions and as master batches upon request.

SEM Images of Graphene Nanoplatelets



Typical Particle Size Distribution for 10µm and 20µm Graphene Nanoplatelet Additives



Notes:

- (1) BET method
- (2) Per loss on ignition (LOI)
- (3) D50 via laser diffraction particle size analysis
- (4) Scott Density based on ASTM B 329-98
- (5) Oxygen content measured using combustion analysis
- (6) The number of graphene layers are estimated from a ratio of the measured BET specific surface area to the theoretical specific surface area of single crystal graphene (2630 m²/g) for the GNP-1000 materials and from Raman spectroscopy.

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All products are made in Lakewood, Ohio, USA

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