

Graphene Nanoplatelets • Grade R

Graphene Nanoplatelets are high purity, low defect, ultra thin particles of graphite of nanometer scale thickness. They can be thought of as short stacks of graphite sheets made through a proprietary manufacturing process. They are produced in several grades and sizes.

The unique size and platelet morphology of **Graphene Nanoplatelets** makes these particles especially effective at providing barrier properties, while pure graphitic composition makes them excellent electrical and thermal conductors. Unlike many other additives, **Graphene Nanoplatelets** can improve mechanical properties such as stiffness, abrasion resistance, and surface hardness of the matrix material.

Graphene Nanoplatelets are compatible with almost all polymers and can be an active ingredient in inks or coatings. The unique non-oxidizing manufacturing processes give the **Graphene Nanoplatelets** a pristine graphitic surface of sp^2 carbon molecules that makes it especially suitable for applications requiring high electrical or thermal conductivity.

Available as bulk powder or in dispersions:
bulk powder dispersions

- * **Grade C** * Aqueous
- * **Grade H** * IPA
- * **Grade M** * Organic solvents
- * **Grade R** * Resins and custom

Product Characteristics

Appearance	Black granules
Bulk Density	0.03 – 0.1 g/cc
Oxygen Content	< 5%
Residual Acid Content	< 0.5 wt%

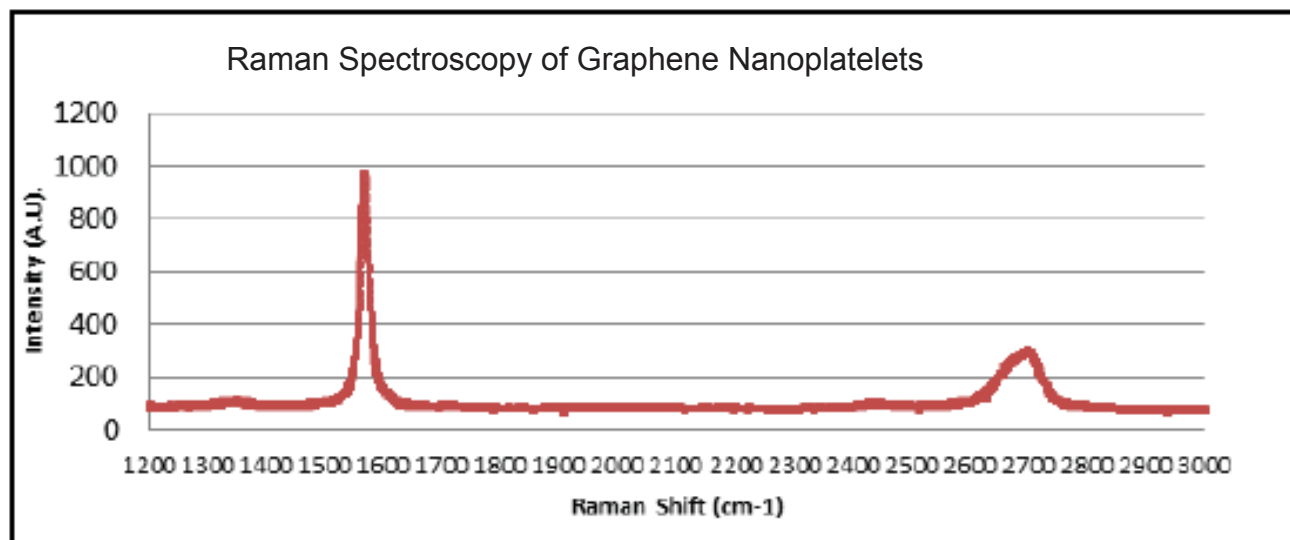
Potential applications include

- Anode materials for lithium-ion batteries
- Conductive additives for battery electrodes
- Ultracapacitor electrodes
- Electrically conductive inks
- Films and coatings for EMI shielding
- Thermally conductive inks and coatings
- Thermal Interface Materials
- Heat spreaders
- Additive for high-strength, lightweight composites
- Additive for metal-matrix composites
- Substrates for chemical and biochemical sensors
- Barrier coatings for packaging
- Barrier coatings for anti-corrosion
- Additives for concrete
- Additives for lubricants

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Product Characteristics • Grade R

Graphene Nanoplatelets are unique nanoparticles consisting of short stacks of graphene sheets having a platelet shape. Grade R particles have a typical surface area of **30 to 60m²/g**. Grade R is available with average particle diameters of **7, 10, or 25 microns**.



	Parallel To Surface	Perpendicular To Surface
Density (g/cm ³)	2.2	2.2
LOI – Loss on Ignition (wt %)	≥ 99.0	≥ 99.0
Thermal Conductivity (W/m.K)	3,000	6
Thermal Expansion (m/m/K)	4 - 6 x 10 ⁻⁶	0.5 - 1.0 x 10 ⁻⁶
Tensile Modulus (MPa)	1,000	NA
Tensile Strength (MPa)	5	NA
Electrical Conductivity (S/m)	10 ⁷	10 ²

Safety

For safety and handling information pertaining to this product, read the Safety Data Sheet (SDS).

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