

DATA SHEET

EXFOLIATED GRAPHENE



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EVERGEIA®

Description

Graphene is a two-dimensional (2D) nanostructure that, like that diamond and graphite (3D) belong to the carbon family but, with multiple highly attractive properties for different industries.

The exfoliated graphene of Energeia Fusion, S.A de C.V is produced by a patented method for the exfoliation of graphite in liquid phase and, consists of a graphene of few layers stabilized with a functionalization that allows it to form stable suspensions in water, as well as combine with other materials or molecules to transfer their properties and improve or create a new compound.

Applications

For scientific and technological research, in the design and development of multifunctional products due to their mechanical, thermal, electrical, optical, antimicrobial, etc.

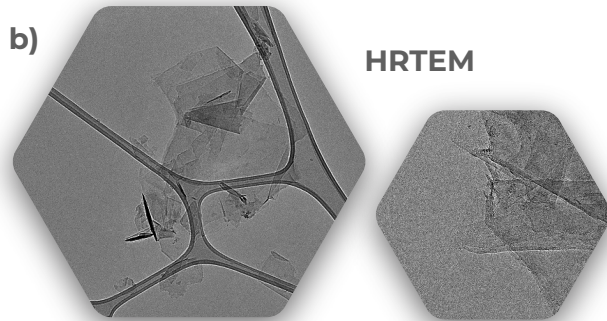
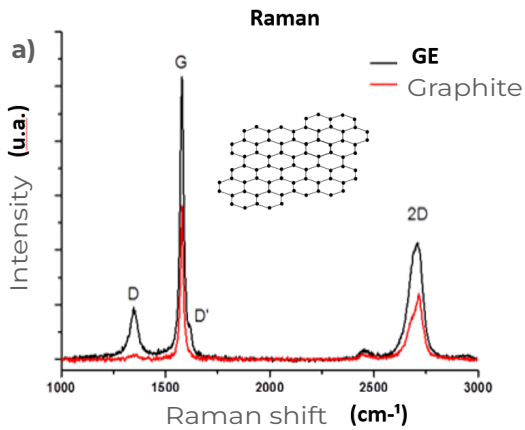
Known applications of graphene

International research supports the potential of graphene in the design of conductive inks, batteries and supercapacitors, photovoltaic cells, sensors, biomedical applications, automotive, aerospace, security, among other.

Technical data

Name: Exfoliated Graphene (GE)
Chemical Family: Graphite (CAS: 7782-42-5)
Colour: Dark gray
Odor: No odor
Solubility: Hydrophilic
pH: 7.0 (0.1mg/mL)
Flake size: ~ 1.0- 5.0 $\mu\text{m} \pm 0.5 \mu\text{m}$
Composition (%): C (90 \pm 2), Others (10 \pm 2)

Characterization of exfoliated graphene



a) Characterization equipment: DXR-Raman-microscope-BR51343.
Energieia Fusion, S.A. of C.V.

b) Micrographs of exfoliated Graphene by High Resolution Transmission Electron Microscopy (HRTEM). Characterization equipment: TEM JEOL JEM-2100. Energy Dispersive Spectroscopy (EDX/EDS), Oxford, Instruments (U.A.S.L.P).

Warnings

Not considered a hazardous substance

Available presentations

**Powder:**

Humidity: ~10%

1gr, 10 gr, 20 gr, 50 gr and 100 gr.

**Paste:**

Humidity: ~30%

1gr, 10 gr, 20 gr, 50 gr and 100 gr

**Dispersion:**

250 ml, 500 ml and 1000 ml

Graphene material concentration: Upon request

Available solvents: Ethanol and water.

Material handling

Handle in accordance with conventional safety and hygiene practices at work.

Use personal protective equipment (PPE): appropriate gloves (neoprene or latex), dust mask and protective glasses; protective clothing according to the quantity, concentration, and purpose of use of the product.

With the passage of time and in dispersion, particularly at high concentrations, graphenic materials can precipitate.

Prior to use, dispersions should be sonicated or sheared for 30 minutes to exfoliate the aggregates.

Graphene material may require additional functionalization to improve their performance according to the desired objective.

Storage

Keep the container closed, in a dry and cool place, and away from sunlight.

Product Disposal Information

- The generation of waste should be avoided or minimized wherever possible.
- Avoid dispersion of material onto the ground, waterways, drains and sewers.
- The substance and/or contaminated packaging must be disposed of as special waste through a specialized waste management company, in accordance with the requirements of environmental protection and waste disposal legislation and any requirements of national, regional and local authorities.
- Uncontaminated packaging can be treated as normal waste.

* For additional information, please review the safety data sheet (SDS)

Legal Note

The information contained in this data sheet is provided in good faith and is valid only for the product to which reference is made. The information is not intended be exhaustive and based on Energeia Fusion, S.A. de C.V current knowledge and experience., if the product is properly stored, handled and applied under normal conditions and in accordance with the recommendations expressed here. Due to the variability of materials, working conditions of each user and purpose of use, our guarantee is limited solely to the quality of the product supplied.

It is advisable to carry out the pertinent tests with the product and determine its suitability before its final application. Energeia Fusion, S.A. de C.V., is not responsible for any damage that may be caused by misuse of the product.

For more information contact contact@graphenemex.com.

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