

# EXFOLIATED GRAPHENE



# DATA SHEET

## EXFOLIATED GRAPHENE

### 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 (Graphenemex®) is produced by a patented method for the exfoliation of graphite to a few layer graphene with a functionalization that allows it to form stable suspensions in water, as well as to combine with other materials or molecules to transfer their properties and improve or create new compounds.

### Use

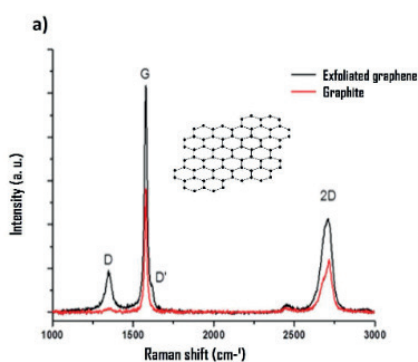
For scientific and technological research, in the design and development of multifunctional products for their mechanical, thermal, electrical, optical, antimicrobial properties, etc.

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

Components	CAS No.	EC. No.	%
Exfoliated graphene	7782-42-5	801-282-5	60-100
Stabilizers	-		1 - 10
Properties			
Physical state: According to presentation: powder, paste, dispersion.	Relative density: Powder: 1.3 g/cm <sup>3</sup> Paste: no data available		
Colour: Dark gray- black	Moisture: Powder: 5- 10% Paste: 30- 35%		
pH: 7.0	Solubility in water (20°C): Soluble		
Exfoliated particle size: ~ 1.0- 5.0 µm ± 0.5 µm			

*\*For more information, see the correspondent product Safety Data Sheet.*

### Characterization



a) Exfoliated Graphene scheme and Raman spectrum (black line), Raman spectrum of graphite (red line). DXR-Raman-microscope -BR51343 (Energeia Fusion, S.A. de C.V.).  
b) Exfoliated Graphene images by High Resolution Transmission Electron Microscopy. TEM JEOL JEM-2100. Dispersive Spectroscopy. (EDX/EDS), Oxford, Instruments (U.A.S.L.P.)


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### Presentation

 Powder  
1g, 10g, 20g, 50g and 100g

 Paste  
1g, 10g, 20g, 50g and 100g

 Dispersion  
250 ml, 500 ml and 1000 ml

Exfoliated graphene 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. Graphenic materials may require additional functionalization to improve their performance according to the desired objective.

### Recommendations

Prior to use, read the product data sheet and safety data sheet. Dispersions: graphenic materials in dispersion, particularly those at high concentrations, tend to precipitate; before use, the dispersions should be sonicated or sheared during 5 to 30 minutes to exfoliate the aggregates. This procedure will probably create some foam that will disappear in a few minutes.

### Warnings

Do not ingest or inhale; avoid contact with skin and eyes. In case of ingestion, do not induce vomiting; rinse nose, mouth and throat and get medical attention. In case of contact with the skin, wash with plenty of soap and water. In case of contact with eyes, rinse with plenty of water. If irritation or discomfort occurs, get medical attention. Keep out of the reach of children.

It is not classified as a dangerous substance. Handle in accordance with good occupational hygiene and safety practices.



USE GLOVES



WEAR GLASSES

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### Storage

Keep the container tightly closed, in a dry place at room temperature; keep away from sunlight. Store away from: oxidizing agents, halogens, and acids.

### Waste management and environmental impact

The generation of waste should be avoided or minimized wherever may be 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.

### Expiration

Up to 12 months in its original sealed container and following storage recommendations.

### 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 to be exhaustive, and it is based on Energeia Fusion, S.A. de C.V., current knowledge, and experience, as long as 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 and purpose of use, the guarantee is limited solely to the quality of the product supplied. It is advisable to carry out the pertinent assays 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](mailto:contact@graphenemex.com).

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