



## PRODUCT DATA SHEET

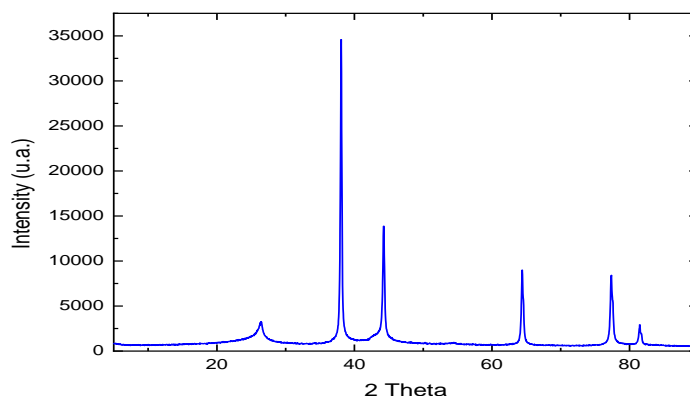
### Graphene – Silver nanoparticles

The nanocomposite has been synthesized by the formation of nanoparticles of silver in the surface of pristine graphene nanoplatelets. The product has the following composition: Ag 19-22 %, Graphene 78-81 % and Volatiles <1%.

The nanomaterial can be used in potential applications as inks on textiles for highly conductive wearable electronics, electrochemical sensors, catalytic and antibacterial activity and detection of heavy metal ions.

Gnanomat develops and tailor-made nanocomposites of carbon materials with nanoparticles and additives of different source for technologically advanced applications.

Graphene – Silver nanocomposite	
Form	Powder
Morphology	Graphene lateral size: 40-200 nm Nano/micro particles diameter (TEM): 10-300 nm Particle size calculated by XRD: 30 nm BET Surface area: 397 m <sup>2</sup> /g
Color	Black
Potential uses and applications*	Catalytic activity, Conductive inks Antibacterial activity Detection of heavy metal ions Electric circuit and chemical sensors
Composition	Ag 19-22 % Graphene 78-81 % Volatiles <1%

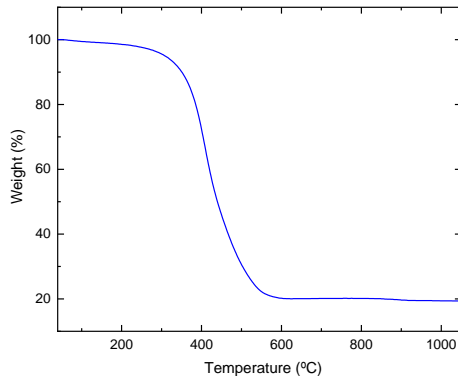


\*XRD spectra

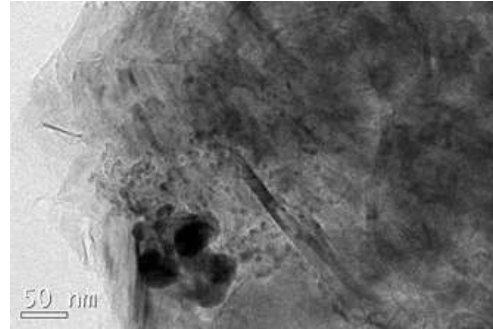




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\*Thermogravimetric curve



\*TEM Image

### About Gnanomat

Gnanomat, your nanotech partner of choice to bring nanomaterials to Industrial applications. The Company offers a versatile range of advanced materials for technologically advanced applications.

Nanomaterials need to be tailored for each specific device and application to ensure the best performance and we establish early collaborations with clients through custom product development.

**Contact us** to design and optimize products that from the first moment address the customer pains and offer real solutions that can fit into your manufacturing process.

Contact Gnanomat: [ts@gnanomat.com](mailto:ts@gnanomat.com)



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\*Application and uses references:

"Karim, N., Afroj, S., Tan, S. et al. All Inkjet-Printed Graphene-Silver Composite Ink on Textiles for Highly Conductive Wearable Electronics Applications. Sci Rep 9, 8035 (2019). <https://doi.org/10.1038/s41598-019-44420-y>"

"Cheng, Youliang & Li, Hang & Fang, Changqing & Ai, Liangliang & Chen, Jing & Su, Jian & Zhang, Qingling & Fu, Qiangang. (2019). Facile synthesis of reduced graphene oxide/silver nanoparticles composites and their application for detecting heavy metal ions. Journal of Alloys and Compounds. 787. 10.1016/j.jallcom.2019.01.320."

"Lakshmi, V. & Jagannathan, Balavijayalakshmi. (2018). Silver Nanocomposites Decorated Reduced Graphene Oxide Nanosheets for Electrochemical Sensor Applications. Oriental Journal of Chemistry. 34. 2872-2877. 10.13005/ojc/340626."

