TECHNICAL DATA

Gold Composite Aerogel

GENERAL INFORMATION

NANOLIT® Gold Composite and **Gold-Nitrogen Composite Aerogel** are carbon aerogels in which a siliceous component is first added to give plasticity to the material and, after removal during manufacture, it forms a new controlled macroporosity combined with a high degree of directed and variable mesoporosity, interesting for processes with kinetic requirements.

The importance of this monolithic composites is the different geometries that can be shaped in tubular channels or pillars, honeycombs, pellets and spheres, among others.

The **Au-NPS** are immobilized by immersing the porous aerogel composite in the Nps suspension. The interpenetration of Gold Nanoparticles in the porous carbon material leads to the formation of a self-supporting network. The metallic superstructures of Gold-Composite Aerogel are highly porous, with very low density, high gas permeability and high specific surface area which makes them a suitable material for use in catalysis, supercapacitor, biomedical and electrosorption applications among others.

PRODUCT SPECIFICATIONS

Technical data of the **NANOLIT® Gold Composite Aerogels** are the following:

Parameter	Gold Composite	Gold-Nitrogen Composite
Core Size Au NPs (nm)	11 - 14	11 - 14
BET area (m^2/g)	750 - 850	500 - 700
Total volume of pores (N_2 adsorption) (cm^3/g)	1.5– 1.8	0.7 – 1.1
Total volume of pores (Hg adsorption on monolith) (cm^3/g)	4 – 5	5 – 6
Porosity (%)	80 - 85	80 - 85
Volume of micropores (DR) (cm^3/g)	0.15 – 0.20	0.10 – 0.18
Volume of mesopores (DFT) (cm^3/g)	1.1 – 1.5	0.5 – 0.8
Nitrogen content (Elemental Analysis) (%w)	_	3 - 5
Gold content (XPS) (%)	< 3	< 3
Size (monolith) Ø x h (cm) (*)	5 X 0.35	5 X 0.35
Unit weight (gr)	1.2 – 1.4	1.2 – 1.4
Particle size (powder) (µm) (*)	< 100 µm	< 100 µm
Apparent density (monolith) (g/cc)	0.20 – 0.30	0.20 – 0.30

(*) Other shapes and dimensions are available on request

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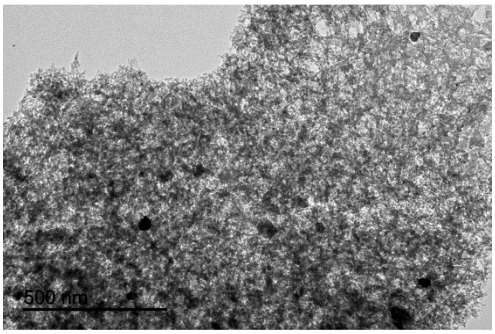
TEXTURE

Transmission Electron microscopy shows the nanostructure of the Gold Composite Aerogel.



APPLICATIONS

For research in the following fields:

- Biomedical and Immunodiagnostic
- Catalysis and electrocatalysis
- Hydrogen storage
- Supercapacitors
- Sensor Systems

SHELF STORAGE

Store at room temperature. If stored unopened and as specified conditions **NANOLIT® Gold Composite Aerogels** are stable for more than 2 years.

PACKAGING

NANOLIT® Gold Composite Aerogels are available in powder and circular monolith (see Product Specifications)

Monoliths: Package of 15 or3 0 units

Micronized: Package of 10 or25 g

The physical and chemical values are typical averages obtained by generally accepted test methods and are subject to normal manufacturing variations, therefore no guarantee is given or intended.