



## Gold Nanomaterial Datasheet

### Powder, Aqueous and Organic Dispersions – Product #09818



- Available in aqueous/waterborne and organic dispersion; standard quantity is 50 mg Au in 30 mL solvent
- Dispersions are also available, on a custom basis, in the *highest* concentrations commercially available.
- Powders available on a custom basis.
- Available in average diameters ranging from 1 nm to 100 nm, with particular emphasis on 8, 13 and 17 nm products.

Gold (Au) nanoparticles are a versatile material whose natural resistance to surface oxidation makes it ideal for a wide-range of electronic and photonic applications. Gold nanoparticle dispersions can range in color from red to purple depending on the particle size. Nano-sized gold applications include high thermal conductivity fluids, antimicrobial applications, fuel cells, flexible electronics, and many others. Of particular importance is the emergence of gold nanoparticles finding wide-ranging applications in the biomedical field due to their excellent biocompatibility and ease of bio-conjugation.

Gold nanoparticle dispersions are fabricated in scaled quantities with mean particle diameters ranging from 1nm to 100 nm, and ship in two prepackaged form factors:

Aqueous stabilized dispersion, and organic stabilized dispersion. Powders are also available on a limited basis, while custom form factors and solvents are available upon request.

The Meliorum Technologies gold product ships in prepackaged 30 mL research quantities, which contain 50 mg of dispersed solute. However, both the sample size and concentration may be modified as required, to concentrations as high as *50 volume percent*. At these concentrations, the solutions take on a paste-like consistency.

#### CONTACT US

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#### MISSION STATEMENT

Meliorum Technologies, Inc. will provide industry and university researchers worldwide with nanomaterials and other nanomaterial-based precursors which provide strict, cutting-edge specifications at a reasonable cost, thereby adding significant value to the end consumer.

#### PRODUCT DIFFERENTIATION

Meliorum Technologies seeks to be your sole source for nanomaterials and nanomaterial application solutions. Contact us at info@meliorum.com to discuss your materials requirements, or look at our current product listing at www.meliorum.com

#### APPLICATIONS

- Bioconjugation
- Tagging for microscopy
- Thermal Engineering
- Nano-fluids
- Micro- and nano-electronics

#### TECHNICAL SUPPORT

Our strategic differentiation comes from many product attributes, not the least of which is support after the sale. Count on Meliorum to help you with your application: from initial inquiry, to post-purchase.

#### SUSTAINED COMMITMENT

Since Meliorum's entry into the nanomaterials marketplace in 2003, The Company has experienced sustained growth ever since. Customer-funded from day one, we rightly focus on the "Voice of the Customer" for our primary strategic guidance. We are passionate and proud to work with both industry and university institutions to further the state of the art in our chosen field.

For more information on any of our products or services please visit us on the Web at:  
[www.meliorum.com](http://www.meliorum.com)

Meliorum Technologies, Inc. – Innovative nanoaterial solutions, from the industry experts. Since 2003.

## Process Control and Supporting Data



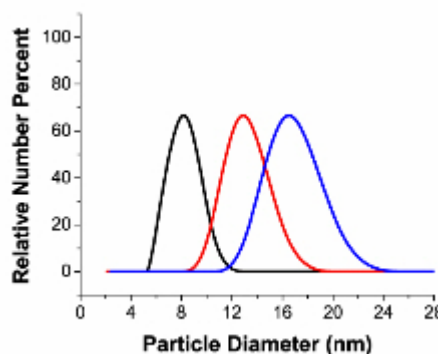
Meliorum Technologies, Inc. has completed Phase I of implementing its operational statistical process control plan. With the completion of this initial implementation and analysis phase, The Company has developed enhanced, high-level knowledge of its own manufacturing process capability. The Plan includes the completion of a year-long period of monitoring key manufacturing process input variables, and subsequent quantitative analysis of resultant outputs. Process outputs were previously defined at the beginning of the year-long period both internally and through target market research, and include parameters such as mean diameter, size standard deviation of particle population (i.e. degree of monodispersity), purity level (raw feedstock and final product), type of impurities (raw feedstock and final product), and for dispersion products, the shelf life of the dispersion (i.e. period of time during which half of total dispersed material has settled),

## Gold Product Attributes

- Mean particle diameter: range 1 nm to 100 nm, emphasis on products of 8 nm, 13 nm, and 17 nm mean diameter with ca. 10% monodispersity
- Approximate surface area, average: based on mean diameter, range from ca. 17 to 38 sq. m per gram
- Particle purity: 99.9+% (metals basis), excluding coating, where applicable; material is deliverable with no surface treatment if specified by user (highest elemental purity achievable)
- Fabricated using a proprietary technology which is, by its nature, scalable; lots in kilogram quantities are now available

#### ADDITIONAL SERVICES

Technical Support  
Application Support  
Supply Agreements (Kanban, JIT)  
Statistical Process Control Data  
Process Capability ( $C_{p,k}$ ) Analysis  
Product Storage Support  
Custom Specification Negotiation



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