CONTACT US

Meliorum Technologies, Inc.
620 Park Ave. #145
Rochester, NY 14607, USA
Phone 585.313.0616
Fax 585.486.1154
info@meliorum.com
www.meliorum.com

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
- Thermal Engineering
- Nano-fluids
- Micro- and nano-electronics
- Flexible electronics
- Magnetic hyperpolarization

Silicon Nanomaterial Datasheet

Powder, Aqueous and Organic Dispersions – Product #09820

- Available in aqueous/waterbourne and organic dispersion; standard quantity is 50 mg Si 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 of 5 nm or 30 nm. Please discuss you requirements with us to determine appropriate product form factor.

Silicon (Si) nanoparticles are an exciting and relatively new material with the potential to revolutionize the electro-optic semiconductor industry. Bulk silicon is an indirect band gap semiconductor, which means it is a highly inefficient source of light. However, depending on properties and fabrication approach, below a particular size threshold nano-sized silicon has been demonstrated as a direct bandgap material. This property paves the way for various product commercialization roadmaps, with nano-Si as their core technology.

Silicon nanomaterials find potential applications in solid state lighting, lasers, microelectronics, biological tags, etc. It may soon reside in a technically disruptive role in biological applications as it is non-toxic to the human body, in contrast to other related materials. Its narrow band photoluminescence can be tuned thoughout the visible spectrum.

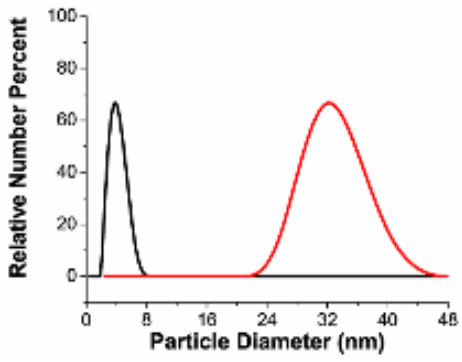
The Meliorum Technologies silicon product ships in prepackaged 30 mL research quantities, which contain 50 mg of dispersed solute. However, both the sample size and concentration may be modified as required, to concentrations as high as *50 volume percent.* At these concentrations, the solutions take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

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),

Silicon Product Attributes

- Mean particle diameter: 5 nm or 30 nm with ca. 10% monodispersity
- Approximate surface area, average: based on mean diameter, range from ca. 86 to 644 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
- Crystallinity (as characterized by XRD) is polycrystalline, for improved semiconductor application relevance



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

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

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

Meliorum TECHNOLOGIES

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