



# Ceria Nanomaterial

*Meliorum*  
TECHNOLOGIES

Innovative Nanomaterial Solutions  
from the Industry Experts

## Cerium Oxide Nanomaterial Powder and Colloid Product Family

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**High Quality, Production Quantity Cerium Oxide Nanoparticles:  
Now Available for the Nanotechnologist**

**Meliorum Technologies Product No. 09817**



### Potential Applications:

- High surface-area catalysts
- Chemical Mechanical Planarization (CMP)
  - Semiconductor applications
  - Photonic applications

### Product Advantages:

- Fabricated using a proprietary technology which has been proven scalable; lots in kilogram quantities are now available
- High purity product (99.99% CeO<sub>2</sub>) for the most dependable and repeatable application results
- Form factor versatility: powder or suspension product available
- Particle size uniformity provides exceptional planarization removal rate results

### Product Features:

- Available in sub-10 nm diameters
- Milligram research quantities to production level lots are now available
- Available in powder form factor, or suspension in aqueous solvent
- User-specified solvent suspensions available upon request
- Powder form factor is available 'coated' or 'bare', depending on user's suspendability requirements
- Highly monodisperse material, with size variations as low as 10% of the mean value (see size distribution graph, next page)

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## Cerium Oxide Nanomaterial Size Distribution Data

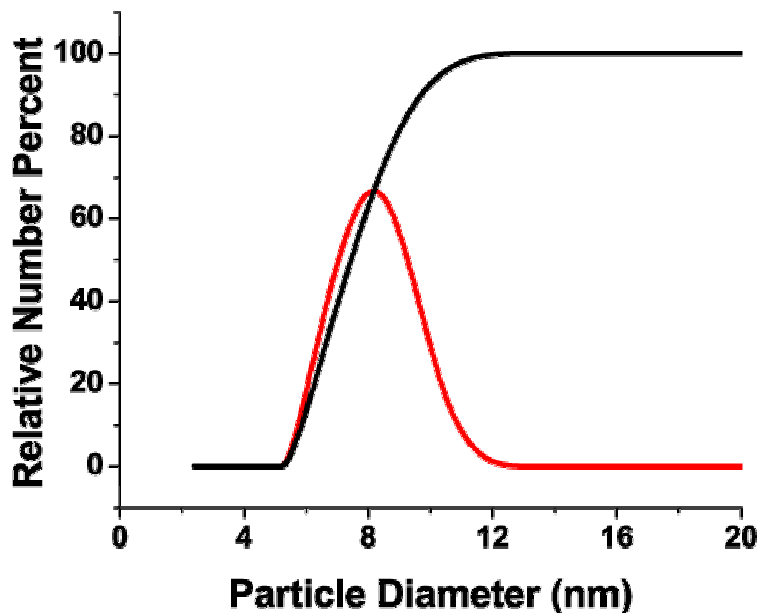


Figure 1 – Analytical particle size distribution profile of Cerium Oxide of silicon nanoparticles fabricated via the Meliorum process. Data obtained with a Beckman Coulter™ Model N4+ Dynamic Light Scattering Particle Size Analyzer. Plot represents a spatial and temporal ensemble average of a colloidal cross section of approximately  $1 \times 10^6$  nanoparticles extracted directly from a random production batch without ultrasonication or special surface treatment. Red line indicates size distribution; black line indicates cumulative size distribution

### Product Parameters: Sub-10 nm Cerium Oxide Material

<b>Material:</b>	Cerium Oxide Nanoparticles (Product #09817)
<b>Particle Diameter:</b>	Sub-10 nm
<b>Particle Size Distribution (one standard deviation):</b>	+/- 10% of mean diameter value
<b>Form Factor:</b>	Powder or Colloid
<b>Colloidal Solvent:</b>	Aqueous or user-specified
<b>Colloidal Concentration:</b>	Customizable; typically 50 mg CeO <sub>2</sub> per 50mL solvent for research quantities
<b>Surface Area:</b>	44 sq. meters/gram

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## **Products for Research and Development Use Only**

Except where specifically enumerated by Meliorum Technologies by contractual agreement, all nanomaterials are for use in a research and development context only. They are not to be incorporated into commercialized food, household, cosmetic, or other applications where the buyer is not the end user. Further, materials sold by Meliorum Technologies are for the buying entity to use in an end-user context only.

## **Qualified Technologists**

Only those individuals with proper technological background and training are permitted to work with Meliorum nanomaterials, while using appropriate protective precautions. In particular, nanopowders have been shown to be an explicit inhalation hazard. For further information, please consult the product MSDS, provided with each order. Or, it is available upon request.

## **Ordering Information and Technical Inquiries**

For ordering information, please visit our online order form at [www.meliorum.com/order.htm](http://www.meliorum.com/order.htm), call our sales offices at +1 607 425 1035, or email [info@meliorum.com](mailto:info@meliorum.com)



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**Innovative Nanomaterial Solutions  
from the Industry Experts**

**Address:**

101 East State Street #246  
Ithaca, New York 14850  
USA

**Phone:**

+1 607 425 1035

**Fax:**

+1 607 697 0401

**Web:**

[www.meliorum.com](http://www.meliorum.com)

**Email:**

[info@meliorum.com](mailto:info@meliorum.com)