



NANO NICKEL

QSI-Nano® nickel nanopowder is manufactured by a patented vapor condensation process. Average particle sizes from 10 to 25 nanometers can be produced with independent control of the nickel oxide coating thickness.

QSI-Nano® Nickel Typical Analysis

Chemical Formula	Ni (core) / NiO (shell)
Crystal Phase	FCC / amorphous
Particle Size Range	10 – 25 nm
Oxide Thickness Range	≥ 2.5 nm
Specific Surface Area (BET)	35 – 65 m ² /g
Color	Black
Bulk Density	0.2 g/cm ³
Ni Density	8.88 g/cm ³
NiO Density	6.72 g/cm ³
T _{melt} of Ni	1455 °C

Custom Formulation and Production

Depending on a customer's specific application and needs, QSI offers nano nickel as a dry, unfunctionalized powder, or dispersed in a selected carrier fluid.

Pricing Information

Call for a quote. Prices are subject to change without notice. Delivery time and shipping charges will be quoted at time of order.

Quotes, Orders and Information

Call 714-545-NANO (6266) to speak with a product specialist or visit us online at www.qsinano.com.

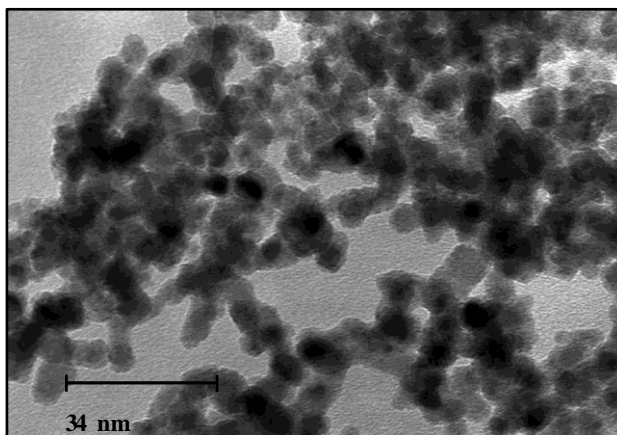
QuantumSphere, Inc.

2905 Tech Center Drive
Santa Ana, CA 92705
714-545-NANO (6266)
Fax: 714-545-6265

www.qsinano.com



QSI-Nano® nickel powder



QSI-Nano® nickel is available in sizes ranging from 10 to 25 nanometers. Nickel content is controlled by oxide thickness and can range from 40% wt. to 90% wt.

QSI-Nano® Nickel Applications

ADVANCED APPLICATIONS	QSI-Nano® ADVANTAGES
<p>Filtration</p> <ul style="list-style-type: none"> • Gas Separation • Biological Protection Systems • Chemical Catalysis 	<p>Filters solutions or gases to remove bacteria, viruses, bio-hazards and pollutants.</p>
<p>Electrodes</p> <ul style="list-style-type: none"> • Integrated Circuits • Batteries • Fuel Cells (anode and cathode) • Water Electrolysis • Capacitors 	<p>Huge surface area and greater surface energy combine to produce orders of magnitude increase in reactive performance.</p>
<p>Coatings and Sealants</p> <ul style="list-style-type: none"> • Thin Films • Paints • Polymers • Gaskets 	<ul style="list-style-type: none"> • Magnetic • Increased Durability • Increased Thermal Conductivity • Abrasion Resistance • Radio Frequency Shielding
<p>Fuel Cells</p> <ul style="list-style-type: none"> • Military • Transportation: Cars, Trucks and Buses • Distributed Power: Homes and Buildings • Portable Power: Laptops, Cell Phones and PDA's 	<p>Direct, low-cost performance replacement for platinum catalyst in a variety of fuel cells (AFC, SOFC), increased durability and extended life cycle, reduced size, and increased efficiency.</p>

Disclosure: QuantumSphere, Inc. makes no guarantee of results and assumes no liability for injuries, damages or penalties resulting from the use of our products, as the conditions of handling and use are beyond our control. In purchasing or receiving these products, the customer acknowledges that there are hazards associated with their use. The Customer represents and warrants to us that from customer's own independent review and study it is fully aware and knowledgeable about (a) the health and safety hazards associated with the handling of the products purchased; (b) industrial hygiene controls necessary to protect its workers from such health and safety hazards; (c) the need to adequately warn of health and safety hazards associated with these products; and (d) government regulations regarding the use and exposure to such products. These products are exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

Avoid contact with skin and eyes. Avoid breathing dust. Use only with adequate ventilation. Always use Neoprene or Nitrile protective gloves and safety glasses. NIOSH certified respirators are recommended and will be useful for protecting workers from nanoparticle inhalation when opening/emptying containers or processing this material. Do not eat or drink in work area. Wash in soap and water after exposure to any dust. Refer to MSDS prior to handling this material.

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