

QSI-Nano® Iron

NANO IRON

QSI-Nano® iron nanopowder is manufactured by a patented vapor condensation process. Average particle sizes from 30 to 60 nanometers can be produced with independent control of the iron oxide coating thickness.

QSI-Nano® Iron Typical Analysis

Chemical Formula	Fe (core) / FeO _x (shell)
Crystal Phase	FCC / amorphous
Particle Size Range	30 – 60 nm
Oxide Thickness Range	≥ 5.1nm
Specific Surface Area (BET)	15 – 30 m ² /g
Color	Black
Bulk Density	0.275 g/cm ³
Fe Density	7.87 g/cm ³
FeO Density	5.7 g/cm ³
T _{melt} of Fe	1538 °C

Custom Formulation and Production

Depending on a customer's specific application and needs, QSI offers nano iron 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® iron powder



QSI-Nano® iron is available in sizes ranging from 10 to 40 nanometers. Iron content is controlled by oxide thickness and can range from 30% wt. to 50% wt.

QSI-Nano® Iron Applications

ADVANCED APPLICATIONS	QSI-Nano® ADVANTAGES
<p>Magnetic Materials</p> <ul style="list-style-type: none"> • Coatings • GMR Sensors • Memory and Storage 	<p>Excellent dispersion.</p>
<p>Electrodes</p> <ul style="list-style-type: none"> • Batteries • Fuel Cells • Water Electrolysis • Integrated Circuits • Capacitors 	<p>High surface area and greater surface energy combine to produce significant increase in reactivity.</p>
<p>Chemical Catalysis</p> <ul style="list-style-type: none"> • Fischer-Tropsch Gas-to-Liquid (GTL) • Steam, CO or CO₂ Reformation • Hydrogenation • Ammonia Production (Haber-Bosch) 	<p>Increased product yield, increased product selectivity. Increased activity at lower temperature and pressure.</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.

QuantumSphere, Inc.

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

www.qsinano.com

As of 04/02/15