

Performance-Tuned Nanoporous Ferric Oxide becomes Commercially Available July 2026

Customized-to-application grain sizes & surface areas, unmatched catalytic reactivity speed & uniform dispersion (in certain composites) coming to eBay

SYNTHETIC-OXIDES.COM
Performance-Tuned Fe₂O₃

ACCEL-O-RUST™
Ultra-High Surface Area NANOPOROUS MICRON FERRIC OXIDE POWDER
WWW.SYNTHETIC-OXIDES.COM



DISRUPT Industries using Fe₂O₃ as a CATALYST with THIS Particle

ALEXANDRIA, VA, UNITED STATES, July 6, 2026 /EINPresswire.com/ -- Scheduled for mid-to-late July 2026, Synthetic-Oxides LLC will begin selling a very limited quantity of Nanoporous Ferric Oxide ("NFO") samples on eBay under the tradename Accel-O-Rust.

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To the best of our knowledge, Synthetic-Oxides LLC is the World's Sole COMMERCIAL Source for Nanoporous Fe₂O₃ & World's Sole SCIENTIFIC Source for Nanoporous MICRON Fe₂O₃.”

Tim Rolf, President

FOR BATTERY & SUPERCAPACITOR ENGINEERS, this presents an unprecedented opportunity.

To understand why, perform a Google AI search on "advantages of Nanoporous ferric oxide in batteries" or "advantages of Nanoporous ferric oxide in supercapacitors". In June 2026, those search results were cumulatively compiled into the following Technical Advantages List:

1. ACTIVE SURFACE AREA: The porous architecture maximizes the electrode/electrolyte contact area iron oxide supercapacitor of high volumetric energy and power, providing ample sites for rapid Faradaic (pseudocapacitive) redox reactions engineering iron-rich nanomaterials.
2. ACCOMMODATES VOLUME CHANGES: The open, porous morphology provides space to absorb the mechanical stress of ion intercalation / deintercalation, which reduces structural degradation over thousands of charge-discharge cycles.
3. ENHANCED ION TRANSPORT: The highly porous morphology increases the available surface area for electrolyte contact and dramatically shortens the diffusion distance for lithium or sodium ions.
4. HIGH-RATE CAPABILITIES: Nanopores enable rapid intercalation and conversion reactions, allowing the battery to endure demanding discharge profiles without losing excessive efficiency.

5. MASSIVE SPECIFIC CAPACITY:

Nanoporous ferric oxide offers a theoretical capacity exceeding 1000 mAh/g, outperforming conventional graphite anodes (372 mAh/g) by a wide margin.

6. SYNERGISTIC CARBON COMPOSITES:

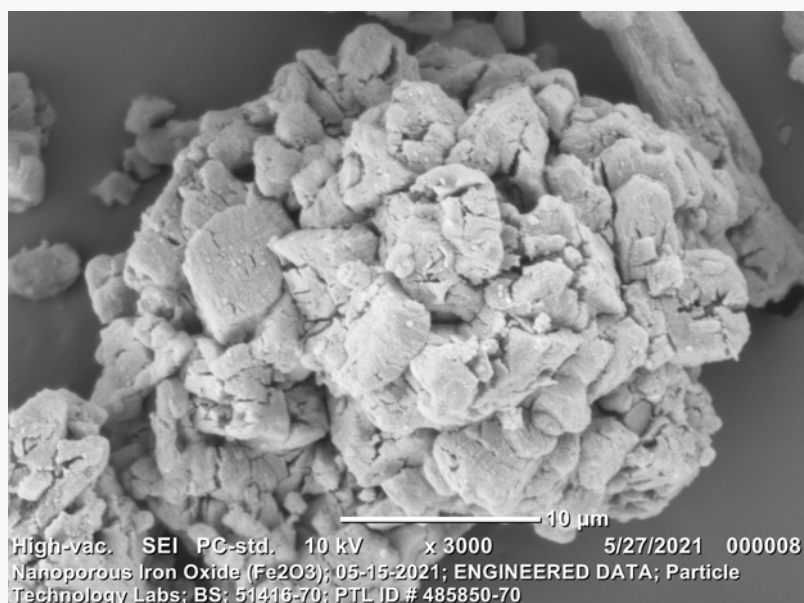
When coated with or embedded in materials, this combination overcomes the traditionally low intrinsic conductivity of iron oxide, resulting in high-rate performance and stable solid electrolyte interphase (SEI) film formation.

7. VOLUME BUFFER: The intrinsic network of pores and voids within the nanostructure provides space for the material to expand and contract during lithiation/delithiation without fracturing or pulverizing the electrode.

Add to this list the ability to performance-tune NFO, or more simply stated, the ability to tailor NFO particle sizes + surface areas to the specific combination which best boosts battery & supercapacitor performance, (unprecedented, in a 1-particle-size-fits-all [applications] world) magnifies the scope & scale of this opportunity.

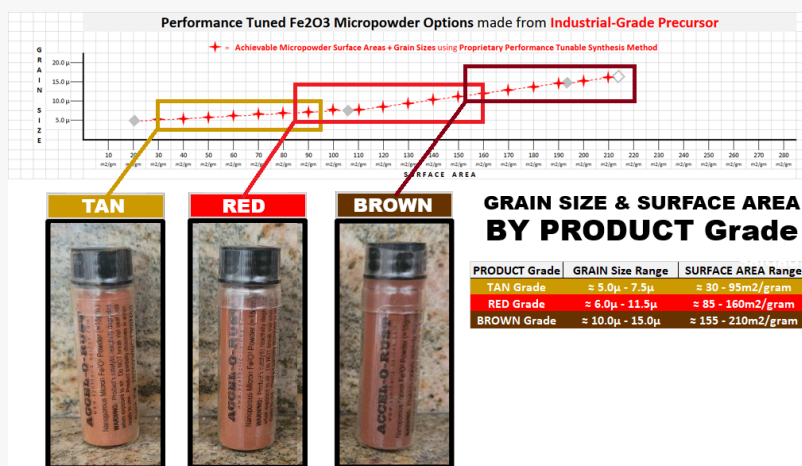
Equally seismic Product Development Opportunities exist in Biomed, Filtration, Ordnance, Propulsion, Remediation, Sensors & other Industrial Sectors. Full Technical Disclosure, including +/- 75 pages of independent lab test results, are viewable at www.synthetic-oxides.com.

Three Grades of Accel-O-Rust exist: TAN Grade, RED Grade & BROWN Grade. TAN Grade has the smallest grain sizes + surface areas. RED Grade has medium grain sizes + surface areas. BROWN Grade has the largest grain sizes + surface areas. NOTE: This surface area / grain size correlation likely seems antithetical to PhDs with no Accel-O-Rust experience who gravitate to the tenet that the sole route to higher surface area is by reducing particle grain size.



NOTE: From 2008-2025, Engineered Data LLC funded Synthetic-Oxides R&D

Scanning Electron Microscope view of Accel-O-Rust Nanoporous Fe₂O₃



3 Grades of Accel-O-Rust + physical properties: TAN Grade, RED Grade & BROWN Grade

As of Press Release Date, +/- 20 TAN Grade and +/- 40 RED Grade samples are available for sale. Another +/- 30 samples (Grade TBD) are expected to come on line later this week. A separate Press Release will be issued once the Synthetic-Oxides eBay store goes live.

TECHNICAL NOTES:

1. "Nanoscale" and "Nanoporous" are NOT the same. "Nanoscale" refers to grain size. "Nanoporous" refers to particle architecture.
2. There are two (2) Types of "Nanoporous" Ferric Oxide powders:
 - a. NANOSCALE Nanoporous Ferric Oxide - particle grain sizes in the 200-350nm range, synthesized by PhDs in tiny (single gram) lab-scale batches using the Aero Sol-Gel Synthesis Method (see <https://www.synthetic-oxides.com/UnivMN.pdf>).
 - b. MICRON Nanoporous Ferric Oxide - particle grain sizes +/- 50X larger than Aero Sol-Gel particles, synthesized in +/-750 gram batch sizes using our proprietary Hybrid Synthesis Method, honed over 16 years of self-funded R&D.
3. In 2024, Accel-O-Rust demonstrated "Holy Grail" near-uniform particle dispersion (achieved by +/- 2 minutes simple mechanical stirring) in a silicone composite, independently verified by [Nikon Metrology Helical CT Scans](#).

Tim Rolf

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