

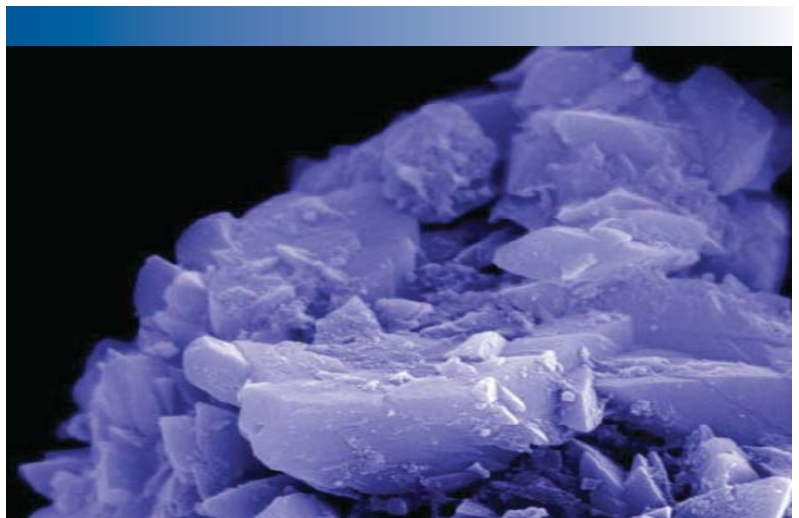
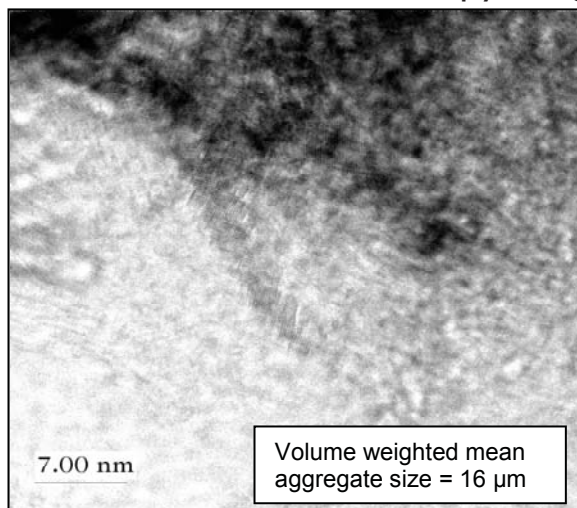
## Magnesium Oxide Plus

NanoActive MgO Plus is produced using proprietary processes to obtain very high specific surface area (over 600 m<sup>2</sup>/g, small crystallite size, high porosity material possessing high chemical reactivity at room and elevated temperatures.

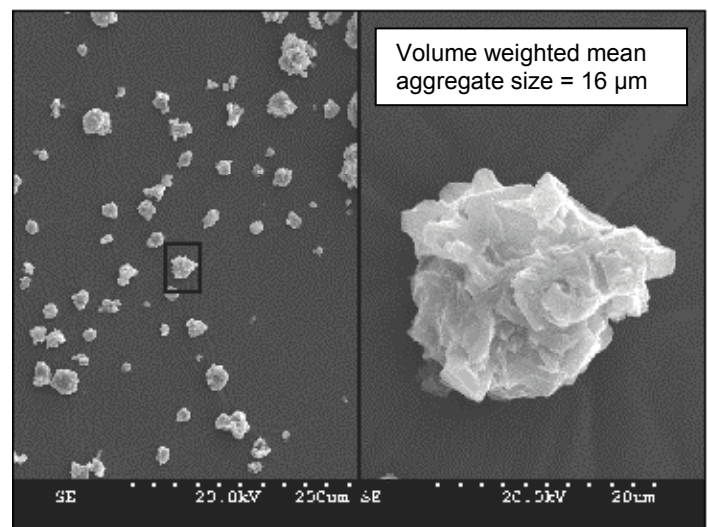
### Typical Properties

Appearance/Color	White Powder
Specific Surface Area (BET)	≥ 600 m <sup>2</sup> /g
Crystallite Size	≤ 4 nm
Average Pore Diameter	30 Å
Total Pore Volume	≥ 0.4cc/g
Bulk Density	0.4 g/cc
True Density	2.4 g/cc
Mean Aggregate Size, d0.5	12 μm
Loss on Ignition	≤ 15%
Moisture Content	≤ 3%
Mg Content (Based on Metal)	≥ 99.2%

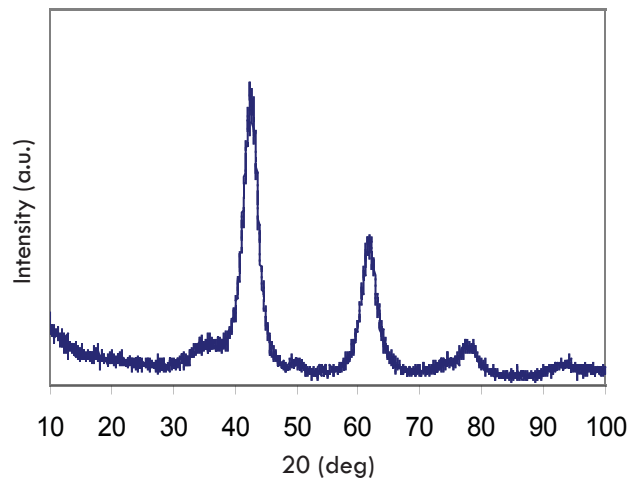
### Transmission Electron Microscopy Image



### Scanning Electron Microscopy Image



### Powder X-ray Diffraction Spectrum





NanoActive materials exhibit a wide array of unusual properties. One of the unusual features is enhanced surface chemical reactivity. Just a few grams of a NanoActive material can have the surface area equivalent to that of a football field. Our NanoActive-S (suspensions) and NanoActive-G (granules) series provide the ability to adjust density and flow characteristics without compromising the high chemical reactivity of our NanoActive products.

Potential Applications	Nanotechnology Benefit
Antimicrobial	Enhanced capacity and reactivity due to high surface area
Catalysts and catalyst supports <ul style="list-style-type: none"> <li>Dehydrohalogenation, methane oxidation, catalytic chlorination of alkenes</li> </ul>	Increased activity due to smaller particle size and higher surface area Higher loading and better dispersion of the active species due to the high surface areas of the support Increased wear resistance Greater capacity for absorption of halogens
Destruction of chemical warfare agents <ul style="list-style-type: none"> <li>Room temperature destruction of VX, GD and HD with the formation of much safer by-products</li> </ul>	Higher capacity Faster kinetics
Destructive adsorption of acid gases and polar organic molecules	High intrinsic surface reactivity and high surface areas
Nanocomposites <ul style="list-style-type: none"> <li>Filler, acid acceptor, thickener catalyst and pigment extender</li> </ul>	Decreased weight Improved physical & mechanical properties
Phosphor particle protecting layer (in plasma display panel) <ul style="list-style-type: none"> <li>Protection of dielectric layer, maintaining a low breakdown voltage under ion bombardment</li> </ul>	Enhanced protection due to smaller particle sizes Longer display lifetime
Precursor for other magnesium chemicals <ul style="list-style-type: none"> <li>Magnesium sulfate, nitrate, citrate, stearate</li> </ul>	Higher reactivity Synthesis of higher surface area materials products that might have new uses
Remediation of toxic waste <ul style="list-style-type: none"> <li>Elevated temperature decomposition of phosphorous and halogenated compounds</li> </ul>	Enhanced reactivity and capacity
Sintering aid	Smaller particles sinter at lower temperatures
Smoke Removal <ul style="list-style-type: none"> <li>Building clearance, military applications</li> </ul>	Faster kinetics and coagulation due to high surface area and unique morphology
Wastewater treatment <ul style="list-style-type: none"> <li>pH adjustment, precipitation of heavy metals, removal of phosphates</li> </ul>	Higher reactivity and faster kinetics

Depending on Customer-specific needs NanoScale can supply its products as dry unfunctionalized powders, compacted powders (granules) or dispersions in various carrier fluids. The custom designed materials can be tested and characterized to meet Customer requirements.

### Order

Product	Catalog Number	Quantity
NanoActive MgO Plus	AC001-0025-00NS	25 grams
	AC001-0100-00NS	100 grams
	AC001-1000-00NS	1 kilogram
NanoActive-G MgO Plus	AC301-0025-00NS	25 grams
	AC301-0100-00NS	100 grams
	AC301-1000-00NS	1 kilogram