Nanomaterials with diameters of <100 nm are being used in a number of applications across multiple domains such as biology, physics, chemistry, cosmetics, optical components, polymer science, pharmaceutical drug manufacture, toxicology, and mechanical engineering. Magnesium oxide (MgO) is an interesting basic oxide that has many applications. For example, MgO with ultrafine, nanoscale particles and high specific surfaces area has shown great promise as destructive adsorbent for toxic chemical agents.

Nanoscale MgO exhibits unique optical electronic, magnetic, thermal, mechanical, and chemical properties, due to its characteristic structures. Therefore, nanoscale MgO has been extensively used in catalysis, toxic waste remediation, and refractory materials industries based on its versatile properties. Magnesium oxide nanoparticles can be applied in electronics, catalysis, ceramics, petrochemical products, coatings and many other fields. Magnesium oxide nanoparticles can be used along with wood chips and shavings to make materials such as sound-proof, light-weight, heat-insulating and refractory fiber board and metallic ceramics.

### Quick Facts

- **Product**: Magnesium Oxide Nanopowder
- **Stock No**: NS6130-03-329
- **CAS**: 1309-48-4
- **Color**: White
- **Form**: Powder
- **Symbol**: MgO
- **Group**: Magnesium 2/Oxygen 16

**Electronic Configuration:**
Magnesium [Ne] 3s2/Oxygen [He] 2s2 2p4

### Additional Powder Characteristics

<table>
<thead>
<tr>
<th>Stock No.</th>
<th>Purity</th>
<th>APS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS6130-03-329</td>
<td>99.9%</td>
<td>&lt;60nm</td>
</tr>
</tbody>
</table>

### Technical Specification

<table>
<thead>
<tr>
<th>Molecular Formula</th>
<th>Molecular Weight</th>
<th>Density</th>
<th>Melting Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>MgO</td>
<td>40.304 g/mol</td>
<td>3.58 g/cm³</td>
<td>2852 °C</td>
</tr>
</tbody>
</table>

### Chemical Composition

<table>
<thead>
<tr>
<th>Product</th>
<th>Weight Percent (nominal)</th>
<th>Other Metal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Oxide Nanopowder</td>
<td>99.9%</td>
<td>1000ppm</td>
</tr>
</tbody>
</table>

### Applications

- Production of silicon steel sheet, high-grade ceramic material
- Electronic industry material
- Adhesive and additive in the chemical raw material
- Electric insulating material for making crucible, electrode bar, and electrode sheet
- High-frequency magnetic-rod antenna, magnetic device filler, insulating material filler
- As a fire retardant used for chemical fiber and plastics trades
- In refractory fiber and refractory material, magnesite-chrome brick, filler for refractory coating, refractory and insulating instrument
- Fuel additive, cleaner, antistatic agent and corrosion inhibitor