



## NANO YTTRIUM OXIDE (Y<sub>2</sub>O<sub>3</sub>) / YTTRIA

**Yttrium Oxide (Y<sub>2</sub>O<sub>3</sub>) or Yttria:** Yttrium oxide is a chemical compound of yttrium and oxygen. It appears as a white solid and is one of the most common compounds of yttrium. It's used in a wide variety of applications, including the production of yttrium iron garnets, which are very effective microwave filters. Yttrium oxide is also used in certain types of ceramics and glass to provide shock resistance. It is utilized as a common starting material for both materials science as well as inorganic compounds.

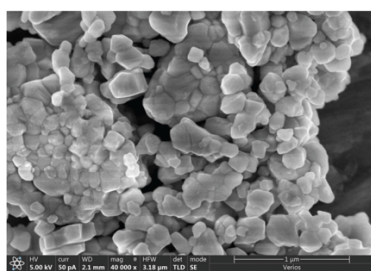
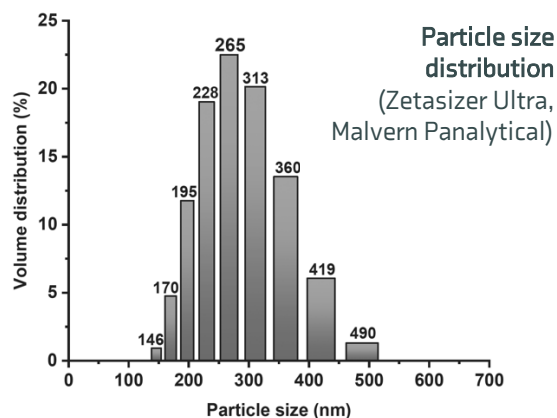
### EXTENSIVE CHARACTERISATION DATA

To ensure uncompromised product quality, each particle batch is analysed and characterized using the latest quality control techniques including dynamic light scattering (DLS), Scanning Electron Microscopy (SEM), transmission electron microscopy (TEM) and Brunauer-Emmett-Teller (BET) analysis. A specific quality control certificate will accommodate every batch. Additional customer-specific characterization requirements can be agreed upon.

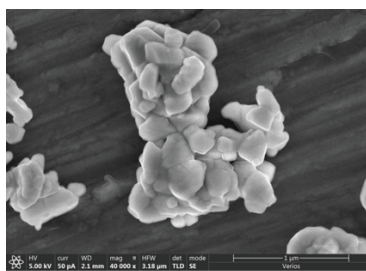
The below is just an example of many different types of **Nano Yttria** and materials we can produce for our customers, also much below that size.

### MATERIAL CHARACTERISTICS

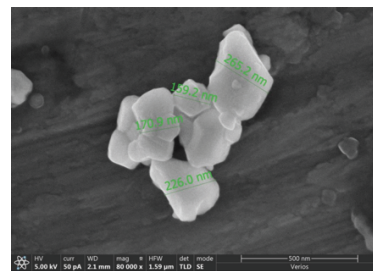
Chemical name	Yttrium Oxide
Formula	Y <sub>2</sub> O <sub>3</sub>
Molecular weight	225.81 g mol <sup>-1</sup>
Physical state	Solid
Appearance (Form)	Powder
Appearance (Color)	White
Purity	99.9 %
Particle size	~265 nm
Pore size (BET)	4 nm
Surface area (BET)	4 m <sup>2</sup> g <sup>-1</sup>



SEM image (Verios G4 XHR SEM)



SEM image (Verios G4 XHR SEM)



SEM image (Verios G4 XHR SEM)

### APPLICATIONS

- Organic synthesis of compound
- Nuclear ceramics
- Ultrafast sensors used in Gamma rays and -rays
- Plasma and flat panel displays
- Superconductors
- Neuroprotective agents with direct antioxidant activity
- Permanent magnets
- Rare-earth dopants
- Additives in coatings
- Strengthened steels used in high-temperature applications, paints & plastics for guarding against UV degradation
- Semiconductor Industry