Quanto nano

Working on the smallest things
with the biggest impact

NANO SILICA (SiO_2)

SILICON DIOXIDE (SiO_2) or SILICA: This is a compound made of silicon and oxygen. It is the most common form in which silicon is found in nature. Silica occurs in many crystalline forms, with quartz being the most common. Silica is the main component of sand and is used to make glass and ceramics, among other things. Additionally, Silica is used in the production of concrete and is a major component in many types of building stone.

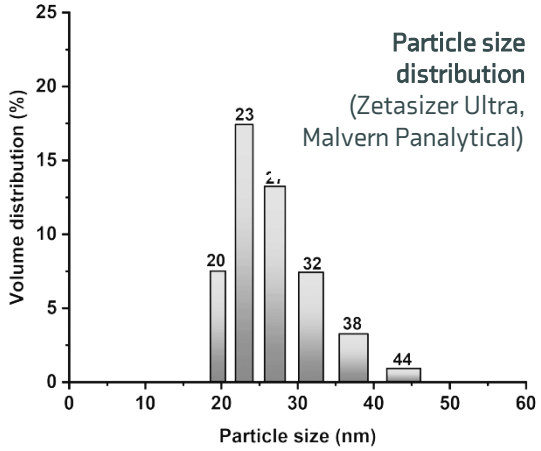
EXTENSIVE CHARACTERISATION DATA

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.

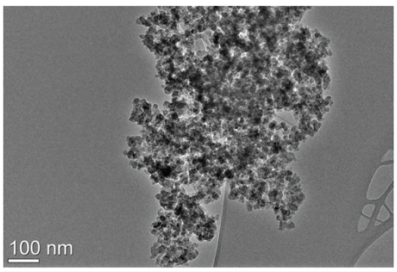
The below is just an example of many different types of **Nano Silica** and materials we can produce for our customers, also much below that size.

MATERIAL CHARACTERISTICS

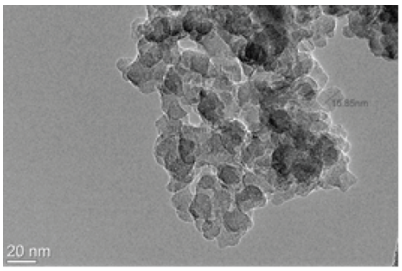
Chemical name	Silicon dioxide
Formula	SiO_2
Molecular weight	60.08 g mol^{-1}
Physical state	Solid
Appearance (Form)	Powder
Appearance (Color)	White
Purity	99%
Particle size (DLS)	~23 nm
Particle size (TEM)	~15 nm
Surface area (BET)	124 m^2 g^{-1}
Zeta potential	-33.4 mV
Polydispersity index (PI)	0.4
pH	6.7



Particle size distribution (Zetasizer Ultra, Malvern Panalytical)



TEM image (JEOL JEM 2010F)



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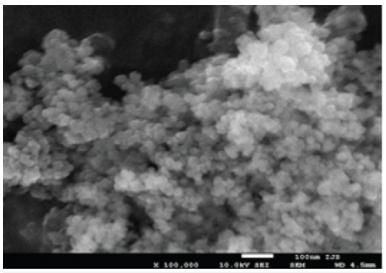

SEM image (JEOL JSM 7600F)

APPLICATIONS

- Battery technologies
- Material packaging
- Binding agent rubber, plastics & concrete manufacturing
- Functional textile production
- Antibacterial & antifungal applications
- Catalyst carrier & Catalysis
- Oil additives & lubrications
- Biomedical applications
- Agriculture & food treatments
- Innumerable applications in biomedicine
- Ultrasound contrast agent for stem cell tracking
- Semiconductor Industry
- Plasmonic colour thin films
- DNA extraction
- Magnetic separation
- Drug delivery agent - targeting tissues and cells with unprecedented specificity control

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