

# Technical Data Sheet

## SiO<sub>2</sub> Nanoparticles



### Description

Silicon Dioxide nanoparticles are high-purity, amorphous or crystalline nano-sized particles with excellent thermal stability, chemical inertness, and high surface area. Their nanoscale dimensions impart unique optical, rheological, and reinforcing properties, making them suitable for a wide range of industrial and high-tech applications including polymer reinforcement, coatings, adhesives, catalysts, pharmaceuticals, and electronics.

### Properties

- Appearance: White, free-flowing fine powder
- Average Particle Size: 20-50 nm
- Purity: >99%
- Density: 2.2 g/cm<sup>3</sup>
- Morphology: Spherical
- Crystal Structure: Amorphous / Crystalline
- Thermal Stability: >1000 °C
- Packaging: 1kg / 5kg / 25kg



### Applications

- Polymers & Plastics: Reinforcement, scratch resistance, barrier properties
- Paints & Coatings: Anti-scratch, anti-corrosion, UV protection, matting agent
- Electronics: Insulating layers, dielectric materials, polishing agents
- Catalysis: Catalyst support, photocatalyst composites
- Pharmaceuticals & Cosmetics: Drug delivery systems, excipients, UV-blockers
- Adhesives & Sealants: Rheology control, mechanical reinforcement
- Ceramics & Glass: Strength enhancement, optical modifiers

### Features

- High surface area and reactivity at nanoscale
- Excellent thermal and chemical stability
- Optical transparency in visible range
- Adjustable surface properties (hydrophilic/hydrophobic)
- Enhances mechanical strength and barrier properties of composites
- Good biocompatibility for pharmaceutical and biomedical applications

### Notes

- The product should be stored in the original container securely under cool and dry conditions away from direct sunlight, heat and contamination.
- Shelf life at proper storage is about 24 months from the production date, but it is recommended to consume the product within 12 months.

