

Z-MITE™

Zinc Oxide Nanoparticles

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Product Information
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America's Leading Manufacturer of Rare Earth and Advanced Material Products

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Chemical Description

Z-MITE powders are inorganic zinc-oxide nanoparticles with antibacterial, antifungal, anti-corrosion, catalytic, and UV filtering properties. Z-MITE-A products are uncoated and hydrophilic. Z-MITE-O products are coated with an organic silane (1-4%) and are hydrophobic. Particles are available in the size range of 10-200 nm.

Range of Products

	INCL Name	CAS #
Z-MITE - AD	Zinc Oxide, Water dispersion	1314-13-2
Z-MITE - AP	Zinc Oxide, Powder form	1314-13-2
Z-MITE - OD	Zinc Oxide, Organic silane	1314-13-2

Applications

Z-MITE nanoparticles are useful as antibacterial and antifungal agents when incorporated into materials, such as surface coatings (paints), textiles, and plastics. The bacteriostatic and fungistatic behavior of Zinc Oxide is well studied and utilized in personal care products. The enhanced surface area of Z-MITE nanoparticles allows for increased interaction with bacteria. This permits using a smaller amount of Zinc Oxide for the same or improved biostatic behavior.

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Zinc oxide is non-toxic, and compatible with skin, making it a suitable additive for textiles and surfaces that come in contact with humans. Zinc Oxide's UV attenuation properties also make Z-MITE an effective additive to packaging plastics to prevent UV damage.

Zinc Oxide is also used as a catalyst for methanol synthesis. The increase in surface area of nanoscale Zinc Oxide compared to larger powders has the potential to improve the efficiency of these processes.

Z-MITE nanoparticles are available with specific compatibility towards both aqueous and organic solvents, allowing for incorporation into most material processes.

Specifications

Formula	ZnO
Appearance	White Powder
Molecular Weight	81.39 AMU
SG/Density	5.61 g/cm ³
Assay (USP)	99.0-100.5%
Loss on ignition	Max 1.0%
Average Particle Size	24-71 nm
SSA	15-45 m ² /g
Bulk Density	0.15 g/cm ³
True Density	5.6 g/cm ³
Morphology	Elongated
Crystal Phase	Hexagonal

Stability

Z-Mite particles are stable for at least 2 years when stored unopened in original packaging.

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Toxicity Because Zinc Oxide nanoparticles are soluble in water and have antimicrobial properties, the material is listed as very toxic to aquatic organisms and as an environmental hazard. All safety measures and instructions found in the Materials Safety Data sheet should be strictly adhered to while handling Zinc Oxide, in both dispersion and powder forms.

Safety data sheets MSDS's are available upon request.

Suppliers Contact American Elements for your local distributor.

Note The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

American Elements shall not be held liable for any damage resulting from handling or from contact with the above product.