

ZINC OXIDE (ZnO) NANOSIZED POWDERS

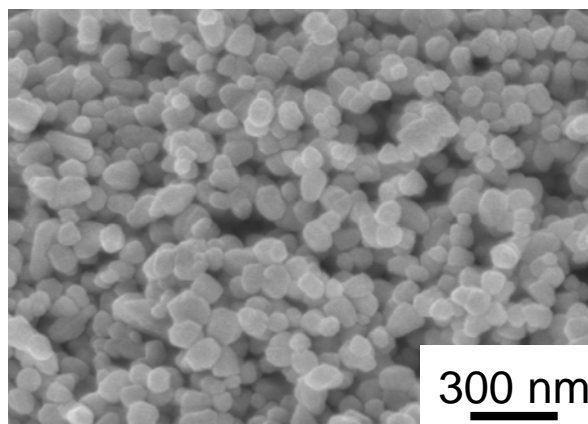
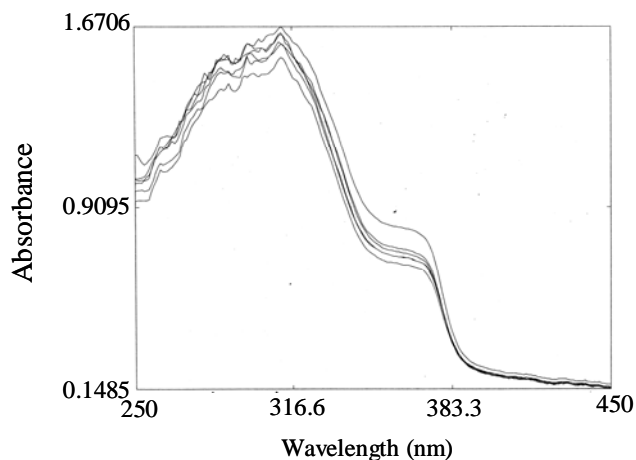
- APPLICATIONS:**
- ◆ UV absorbers/filters (sunscreens, cosmetics, paints, varnishes, plastics)
 - ◆ Photo-catalysts, catalysts, supports/carriers
 - ◆ Pigments
 - ◆ Powder for sintering
 - ◆ UV detectors, transistors, solar cells
 - ◆ Piezoelectric devices (transducers, SAW, BAW)

Properties of zinc oxide (ZnO) powders synthesized by the hydrothermal method*

Property	Product No.			
	ZOP-46	ZOP-52	ZOP-43	ZOP-15
Crystal form	100% ZnO (zincite)			
Chemical purity (%)	99.9+	99.9+	99.9+	99.9+
Median particle size, D ₅₀ (nm)	94	106	118	150
Crystallite size range (nm)	60-150	60-120	60-150	100-200
Mean SPF number	23	-	-	-
UVA ratio	0.49	-	-	-
Typical impurity levels	Pb	0.14-0.2 ppm		
	As	0.008-0.16 ppm		
	Cd	0.006-0.75 ppm		
	Cu	1.2-1.6 ppm		
	Mn	0.9-4.9 ppm		
	Fe	3.0 ppm		
	SO ₄	2-4 ppm		
	CO ₃	440 ppm – 0.1%		

*Powders with other sizes, purity levels, and dopants may be available upon request.
 Dispersions available upon request

Hydrothermal method is very useful to produce variety of ZnO powders, including nanosized ZnO powders with very narrow crystallite size distributions and a range of bimodal size distributions (not shown). Sawyer's ZnO powders exhibit much more uniform crystallite size distributions, significantly higher chemical purity, and level of lattice perfection than the commercially available ZnO powders synthesized by classical high-temperature methods. Their UV absorption is superior to the commercial ZnO, particularly in the UVA range, making them attractive as UV filters in sunscreens or other applications.



US Patents Pending