



Shanghai King Chemical Co.,Ltd

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NO.2337 GuDai Road, Minhang District, Shanghai, China

Name: Reagent grade zinc oxide

Project	indicators		
	I type	II type	III type
Appearance	White powder		
Zinc oxide content, % \geq	99.70	99.70	99.50
Content of metal, % \leq	There is no	There is no	0.008
Hydrochloric acid insoluble, % \leq	0.006	0.008	0.03
Burn loss, % \leq	0.20	0.20	0.25
Sieve residue, % \leq	0.10	0.15	0.20
Water soluble, % \leq	0.10	0.10	0.15
105°C volatile, % \leq	0.3	0.4	0.5
Lead (Pb) content, % \leq	0.0080	0.05	0.10
Copper (Cu) content, % \leq	0.0002	0.0004	0.0007
Manganese (Mn) content, % \leq	0.0001	0.0001	0.0003
Cadmium (Cd) content, % \leq	0.0020	0.0050	0.010
Iron (Fe) content, % \leq	0.0050	0.010	-
Specific surface area /(m ² /g)	agreed		-
Oil absorption/(g / 100 g)	agreed		
Color	agreed		
Decolorization force	agreed		
Note: zinc oxide (indirect method) products only			

Reagent grade zinc oxide is an important and widely used physical sunscreen, shielding uv rays by absorption and scattering. Reagent grade zinc oxide is an N-type semiconductor, the valence band of electrons can accept the uv energy transition, which is the principle of their uv absorption. Have you ever really known reagent grade zinc oxide?

Introduction and action of reagent grade zinc oxide

Reagent grade zinc oxide is white crystal or powder, belonging to hexagon system. Odorless, non-toxic, sandless, fine quality. Density 5.606g/cm³, refractive index 2.0041, 1800°C sublimation. The coloring power is 2 times that of basic lead carbonate, and the hiding power is half that of p2O2 and zinc sulfide. Insoluble in water and ethanol, soluble in acid, sodium hydroxide, ammonium chloride, amphoteric oxide. It is yellow when heated at high temperature and white when cooled. In humid air, it absorbs carbon dioxide and water and gradually transforms into basic zinc carbonate. It can also be reduced to metallic zinc by carbon or carbon monoxide. There is excess zinc



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in the lattice of zinc oxide, the first ionization energy of zinc is low, easy to lose electrons, and the electron mobility of zinc oxide is much larger than the hole mobility, can be regarded as n-type semiconductor.

Reagent grade zinc oxide action: inorganic white pigment. Coloring power is inferior to titanium dioxide and lithopone. Widely used in ABS resin, polystyrene, epoxy resin, phenolic resin, amino resin, polyvinyl chloride and paint and ink coloring. In addition, in the rubber industry can also be used as rubber vulcanizing agent, reinforcing agent and colorant. Also used in lacquer cloth, cosmetics, enamel, paper, leather, matches, cable and other production. It can also be used in printing and dyeing, glass industry, medicine industry and so on. It is also used as a desulfurizer in ammonia synthesis. Also used as electronic laser materials, phosphor, feed additives, magnetic material manufacturing, etc.

Mechanism and implementation standard of reagent grade zinc oxide sunscreen

Reagent grade zinc oxide is a stable compound of nano zinc oxide, which can provide a wide spectrum of UV protection (UVA and UVB), as well as antibacterial and anti-inflammatory effects. It is the safest and most effective ingredient in the evaluation of sunscreen in almost all countries. However, their very small size makes them more chemically active and potentially harmful to humans and the environment because they can be absorbed by the body. Therefore, the use of nano-scale zinc oxide is still controversial. The European Union, for example, said in 2004 that nano-sized zinc oxide could be absorbed and could cause DNA damage. Australia said in a 2006 review that it did not consider nanoparticles to be absorbed into the skin. The U.S. FDA approved the use of zinc oxide in 1999, but did not allow the use of nano-zinc oxide because of safety concerns, and approved nano-zinc oxide as a new active ingredient in 2006.