



Indroduction

Zinc oxide (ZnO) is a white, powdery compound that consists of zinc and oxygen atoms. It is a versatile material with a wide range of applications due to its unique properties. Here are some key aspects of zinc oxide:





CAS No.	1314-13-2
Formula	ZnO
Molecular Weight	81.39
Purity	99.50%

CHEMICAL COMPOSITION

ZnO is composed of one zinc (Zn) atom bonded to one oxygen (O) atom, forming a 1:1 ratio of zinc to oxygen.

PHYSICAL PROPERTIES

Appearance	White, odorless, and crystalline powder.
Melting Point	ZnO has a high melting point of approximately 1,975°C (3,587°F).
Solubility	It is virtually insoluble in water but can dissolve in acids and bases.

USES AND APPLICATIONS

1	Sunscreen	Zinc oxide is a common ingredient in sunscreens due to its ability to absorb and reflect ultraviolet (UV) radiation, providing protection against sunburn and skin damage.
2	Cosmetics	It is used in cosmetics such as makeup, lotions, and creams for its sun-blocking and soothing properties.
3	Medicine	ZnO is used in various medicinal products like ointments, powders, and creams for its antiseptic and skin-healing properties.
4	Ceramics	It is used as a glaze in ceramics and pottery.

5	Electronics	ZnO is used in the manufacturing of varistors, a type of electronic component
6	Rubber and Plastics	It can be added to rubber and plastic products to improve their UV resistance and durability.
7	Pigments	ZnO is used as a white pigment in paints, coatings, and printing inks
8	Photocatalytic Properties	ZnO has photocatalytic properties, which means it can facilitate chemical reactions when exposed to ultraviolet (UV) light. This property has applications in wastewater treatment and air purification.
9	Biomedical Applications	Researchers are exploring the use of zinc oxide nanoparticles in various biomedical applications, including drug delivery, cancer treatment, and antibacterial coatings.
10	Safety	Zinc oxide is generally considered safe for topical use in sunscreens and cosmetics. However, inhaling large amounts of airborne zinc oxide particles can be harmful to the respiratory system, so precautions are taken in occupational settings where exposure may occur.
11	Nanoparticles	Nanoscale ZnO particles have unique properties and are used in various advanced applications, including in nanoelectronics and as antimicrobial agents.

Overall, zinc oxide is a versatile compound with a wide range of industrial, cosmetic, and medical applications.