

Nano Zinc Oxide Market Report by Type (Uncoated Nano Zinc Oxide, Coated Nano Zinc Oxide), Application (Personal Care and Cosmetics, Paints and Coatings, and Others), and Region 2024-2032

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Abstracts

The global nano zinc oxide market size reached US\$ 1094.6 Million in 2023. Looking forward, IMARC Group expects the market to reach US\$ 3228.6 Million by 2032, exhibiting a growth rate (CAGR) of 12.5% during 2024-2032. The market is primarily driven by the rising application of nano zinc oxide in coatings and paints, increasing government support for sustainable agriculture, and rising investments in renewable energy technologies are propelling the market growth.

Nano Zinc Oxide Market Analysis:

Major Market Drivers: The market for nano zinc oxide is mainly propelled by its numerous uses in a range of sectors, including electronics, healthcare, and cosmetics. Additionally, the rising emphasis on eco-friendly substitutes and the growing necessity for ultraviolet (UV) protection solutions are influencing the market growth. Key Market Trends: The expansion of research and development (R&D) for improving the characteristics and uses of nano zinc oxide, including its incorporation into sophisticated sunscreens and antibacterial coatings is contributing to the market growth. Moreover, the rising trend toward innovation and sustainability is reflected in the use of nanozinc oxide in cutting-edge disciplines including nanomedicine and renewable energy applications.

Geographical Trends: The nano zinc oxide market growth in Asia Pacific can be attributed to the existence of manufacturers, fast industrialization, and the expanding electronics and cosmetics industries in nations such as China, Japan, and South Korea, leading the global market. Nonetheless, North America and Europe with their strict laws encourage the use of safe and environmentally acceptable products across the region.



Competitive Landscape: Some of the major market players in the nano zinc oxide companies include American Elements, BASF SE, Guangzhou Hongwu Material Technology Co. Ltd., Inframat Advanced Materials LLC (Inframat Corporation), Merck KgaA, Micronisers Pty Ltd, Nanophase Technologies Corporation, Pan-Continental Chemical Co.Ltd., Sakai Chemical Industry Co. Ltd, Shandong Xingya New Material Co. Ltd., SkySpring Nanomaterials Inc., Tata Chemicals Limited (Tata Group), and Tianxiongjian New Material Co.Ltd., among many others.

Challenges and Opportunities: The regulatory obstacles and worries about the possible toxicity of nano zinc oxide are possible challenges, particularly in areas with strict safety laws. Nonetheless, the nano zinc oxide recent opportunities especially in emerging nations where regulatory frameworks are changing and there is a growing product demand due to the expanding application areas including food packaging and agriculture present promising growth prospects for the market.

Nano Zinc Oxide Market Trends: Rising Application of Nano Zinc Oxide in Coatings and Paints

The global paints and coatings market is witnessing a significant surge, with a US\$ 177.4 Billion valuation in 2023. The worldwide paints and coatings market expanded to a value of US\$ 177.4 Billion. As per the forecasts from IMARC Group by 2032, this market is anticipated to escalate to US\$ 269.0 Billion, showcasing a compound annual growth rate (CAGR) of 4.6% between 2024 and 2032. Among the array of materials enhancing the functionality of coatings and paints, nano zinc oxide stands out for its remarkable properties, particularly its UV filtering and antibacterial attributes. Nano zinc oxide plays a pivotal role in the protective coatings segment, which is anticipated to expand at a commendable CAGR of 6.1% from 2021 to 2028. This growth trajectory is indicative of the industry's recognition of nano zinc oxide's efficacy in providing durable and sustainable coatings solutions. Moreover, as environmental concerns increase, the eco-friendly coatings like nano zinc oxide demand are likely to escalate further, driving innovation and adoption within the paints and coatings sector.

Government Support for Sustainable Agriculture

The government initiatives supporting sustainable agricultural practices globally are driving a noticeable spike in the use of nano zinc oxide in agriculture for crop protection and nutrient replenishment. Additionally, governments are spending more on agricultural research and development after realizing the critical role technology plays in boosting agricultural output while reducing environmental effects. Notably, the Food and Agriculture Organization of the United Nations (FAO) announced in 2022 that the



Center had assisted in the establishment of 45 public investment programs in 32 countries in 2022, totaling USD 8.8 billion in new investments a 22% increase from USD 7.2 billion in the previous year. In addition, it provided support for the execution of 275 active investment projects in association with international financing institutions (IFIs), totaling more than USD 44.5 billion in portfolio value. The aforementioned investments demonstrate the dedication to promoting innovation in the field of agriculture. Specifically, nano zinc oxide has great potential in mitigating issues associated with insect control, soil health, and nutrient shortages, ultimately strengthening the sustainability and resilience of food systems across the globe.

Increasing Investments in Renewable Energy Technologies

The adaptable characteristics of nano zinc oxide have led to a wide range of uses in renewable energy technologies, especially in solar cells and batteries, against the backdrop of growing government investments and subsidies globally. Additionally, nano zinc oxide plays an important role in improving the durability and efficiency of renewable energy technology as the world moves toward a low-carbon future. Its application in batteries leads to better energy storage solutions, which accelerates the transition to a sustainable energy market, and its use in solar cells improves light absorption and electron mobility, supporting the overall performance and viability of solar energy systems. According to the International Energy Agency (IEA), projections suggest that approximately USD 2.8 trillion will be assigned to energy investments in 2023. In addition, over USD 1.7 trillion is reserved for clean energy initiatives, surrounding renewable energy sources, nuclear power, grid infrastructure, energy storage, lowemission fuels, efficiency enhancements, and the promotion of renewables and electrification at end-use. The remaining portion, slightly exceeding USD 1 trillion, will be directed toward unabated fossil fuel supply and power, with coal accounting for approximately 15% and the remainder allocated to oil and gas. Notably, for every USD 1 spent on fossil fuels, USD 1.7 is now allocated to clean energy endeavors. Thus, the rising demand expands the market and encourages innovation in nano zinc oxide production, positioning it as a vital contributor to the clean energy transition, thus creating a positive nano zinc oxide market outlook.

Nano Zinc Oxide Market Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the market, along with forecasts at the global, regional, and country levels for 2024-2032. Our report has categorized the market based on type and application.

Breakup by Type:



Uncoated Nano Zinc Oxide Coated Nano Zinc Oxide

Uncoated nano zinc oxide accounts for the majority of the market share

The report has provided a detailed breakup and analysis of the market based on the type. This includes uncoated nano zinc oxide and coated nano zinc oxide. According to the report, uncoated nano zinc oxide represented the largest segment.

The uncoated nano zinc oxide holds a significant share due to its wide-ranging application in different industries, including electronics, medicines, and cosmetics. In addition, the rising demand for nano zinc oxide due to its special qualities including strong ultraviolet (UV) protection, antibacterial qualities, and superior optical qualities are contributing to the market growth. It is a recommended option for use in medicinal ointments, sunscreen formulas, and electronic gadgets owing to its adaptability and compatibility with various materials further propelling the rise in the uncoated nano zinc oxide sector. Hence, as per the European Union, zinc oxide nanoparticles are safe to use as ultraviolet (UV) filters in sunscreens applied topically. The committee states that sunscreen products are safe up to a concentration of 25% and that this safety extends to goods with bigger zinc oxide particles. Zinc oxide nanoparticles coated and uncoated, are the subject of the safety evaluation carried out by the SCCS, and the information on these nanoparticles is included in the dossier submitted to the committee. As per the nano zinc oxide market overview, further testing will be necessary to determine whether newly developed coatings meant for use as sunscreens or cosmetics can enhance the penetration of nanoparticles into the skin.

Breakup by Application:

Personal Care and Cosmetics
Paints and Coatings
Others

Personal care and cosmetics hold the largest share of the industry

A detailed breakup and analysis of the market based on the application have also been provided in the report. This includes personal care and cosmetics, paints and coatings, and others. According to the report, personal care and cosmetics accounted for the largest market share.



The personal care and cosmetics sector is widely using nano zinc oxide owing to its many uses, including broad-spectrum sunblocking, anti-inflammatory, and UV protection. It is also employed in moisturizers, anti-aging creams, and sunscreen formulas in the personal care and cosmetics sector. The worldwide personal care and beauty business hit a new high of \$1,089 billion in 2022, according to statistics from the Global Wellness Institute. In addition, North America with \$336 billion in 2022 leads the market, followed by Europe at \$303 billion, and Asia-Pacific with \$273 billion. North America has the largest per capita spending, with an average of \$901 in 2022. Moreover, as per the latest report by IMARC Group, the global market for cosmetics and personal care products reached US\$ 506.2 billion in 2023. It is further expected to develop at a compound annual growth rate (CAGR) of 4.5% from 2024 to 2032 reaching US\$ 759.3 billion. Thus, the significant expansion of the personal care and cosmetics market is encouraging consumers to invest in personal care products, generating nano zinc oxide market revenue.

Breakup by Region:

North America

United States

Canada

Asia-Pacific

China

Japan

India

South Korea

Australia

Indonesia

Others

Europe

Germany

France

United Kingdom

Italy

Spain

Russia

Others

Latin America

Brazil



Mexico
Others
Middle East and Africa

Asia Pacific leads the market, accounting for the largest nano zinc oxide market share

The report has also provided a comprehensive analysis of all the major regional markets, which include North America (the United States and Canada); Europe (Germany, France, the United Kingdom, Italy, Spain, Russia, and others); Asia Pacific (China, Japan, India, South Korea, Australia, Indonesia, and others); Latin America (Brazil, Mexico, and others); and the Middle East and Africa. According to the report, Asia Pacific represents the largest regional market for nano zinc oxide.

As per the nano zinc oxide market forecast, the Asia Pacific market's growth is attributed to several factors, including the thriving industrial operations, and the enduser industries, such as electronics, textile, cosmetics, and healthcare. Asia Pacific area is a leading producer and consumer of nano zinc oxide, with nations such as China, Japan, and India driving the breakthroughs and showing a voracious desire for novel uses. According to a report released by the Professional Clothing Industry Association Worldwide (PCIAW) in February 2023, the National Technical Textiles Mission (NTTM) has been approved for four years, starting in the financial year 2020–2021 and ending in the Financial Year 2023-2024. Nano zinc oxide is widely used in specialty fibers and technical textiles is due to its UV-blocking properties, enhanced fabric durability, and performance that provide sun protection, antimicrobial properties, and improved mechanical strength.

Competitive Landscape:

The market research report has also provided a comprehensive analysis of the competitive landscape in the market. Detailed profiles of all major companies have also been provided. Some of the major market players in the nano zinc oxide industry include American Elements, BASF SE, Guangzhou Hongwu Material Technology Co. Ltd., Inframat Advanced Materials LLC (Inframat Corporation), Merck KgaA, Micronisers Pty Ltd, Nanophase Technologies Corporation, Pan-Continental Chemical Co.Ltd., Sakai Chemical Industry Co. Ltd, Shandong Xingya New Material Co. Ltd., SkySpring Nanomaterials Inc., Tata Chemicals Limited (Tata Group), and Tianxiongjian New Material Co.Ltd.

(Please note that this is only a partial list of the key players, and the complete list is provided in the report.)



At present, major companies in the nano zinc oxide sector are actively involved in strategic initiatives. This involves spending on research and development (R&D) to improve product effectiveness and increase application opportunities in a variety of industries, including electronics, healthcare, and cosmetics. Moreover, nano zinc oxide market recent developments include collaboration and partnerships with academic institutions and end-user businesses to adapt to changing market needs. Furthermore, endeavors aimed at augmenting manufacturing efficacy, guaranteeing quality benchmarks, and broadening distribution channels bolster market penetration and promote long-term expansion within the nano zinc oxide sector.

Nano Zinc Oxide Market News:

8 January 2024: Allentown LLC, a company within Aterian Investment Partners' portfolio, announced its acquisition of ClorDiSys Solutions, Inc. Headquartered in Branchburg, NJ, ClorDiSys specializes in several solutions for sterilizing vivariums, laboratory equipment, and medical devices which marks Allentown's second strategic addition under Aterian's ownership, following the acquisition of BetterBuilt in May 2023.

Key Questions Answered in This Report

- 1. How big is the global nano zinc oxide market?
- 2. What is the expected growth rate of the global nano zinc oxide market during 2024-2032?
- 3. What are the key factors driving the global nano zinc oxide market?
- 4. What has been the impact of COVID-19 on the global nano zinc oxide market?
- 5. What is the breakup of the global nano zinc oxide market based on the type?
- 6. What is the breakup of the global nano zinc oxide market based on the application?
- 7. What are the key regions in the global nano zinc oxide market?
- 8. Who are the key players/companies in the global nano zinc oxide market?



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