

Graphene Nanoplatelets Market Report by Application (Composites, Energy and Power, Conductive Inks and Coatings, and Others), and Region 2025-2033

Market Report | 2025-09-01 | 146 pages | IMARC Group

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Report description:

The global graphene nanoplatelets market size reached USD 141.6 Million in 2024. Looking forward, IMARC Group expects the market to reach USD 1,477.1 Million by 2033, exhibiting a growth rate (CAGR) of 28.28% during 2025-2033. The graphene nanoplatelets market is expanding due to technological advancements, increased demand for eco-friendly materials, extensive R&D investments, supportive regulatory policies, and growing applications in the energy sector, highlighting its critical role in driving sustainable and innovative solutions across various industries.

Graphene Nanoplatelets Market Trends:

Technological Advancements

A significant development in material science, particularly concerning graphene development and processing, represents a primary driver for the graphene nanoplatelets market growth. Due to their exceptional mechanical, thermal, and electrical qualities, graphene nanoplatelets are ideal for high-performance applications. As a result, businesses in the automotive, aerospace, and electronics manufacturing sectors take advantage of these properties to increase their products' performance and efficiency. For instance, in May 2023, Graphene Manufacturing Group Ltd. announced that GMG and Rio Tinto have signed a binding Joint Development Agreement (JDA) to provide additional support for the development and application of GMG's graphene aluminum-ion batteries in the mining and mineral industry. In exchange for preferential access rights, Rio Tinto will contribute technical and operational performance criteria and A\$6 million.

Growing Demand for Eco-friendly and Energy-efficient Materials

The graphene nanoplatelets market demand is increasing due to environmental concerns and the global shift toward sustainability. These materials are crucial in energy storage systems such as batteries, and supercapacitors, and for renewable energy technologies. The application in thermal management enhances material and energy efficiency, vital in building and electronic industries. The demand for high-efficiency, sustainable materials is leading industries to integrate graphene nanoplatelets, thereby propelling market growth. For instance, In July 2021, Applied Graphene Materials (AGM), a prominent developer and producer of graphene nanoplatelet dispersions, announced eco-friendly graphene nanoplatelet dispersions that

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allow paints, coatings, and composite materials consumers to enhance the sustainability of their product which are suitable for incorporation in water-based coatings, curbing the use of volatile organic compounds.

Expansion of Research and Development (R&D) Investments and Collaborations

The graphene nanoplatelets market value is a rapidly growing due to the large investments in research and collaboration among key players. Universities, research institutes, and corporations are discovering new applications and enhancing existing ones, leading to innovation and the development of new market segments. Furthermore, collaborations between graphene producers and application industries are critical for the continued optimization of graphene properties in response to consumer needs and expansion into new markets, thus contributing to the graphene nanoplatelets market overview. For instance, a study on the mechanisms of graphene nanoplatelets (GNP) in cement hydration and pore structure conducted by Baomin and Shuang indicated that 0.06%w/w of GNP minimizes compressive and flexural strength to 11.0% and 27.8% after 28 days of hydration when added to ordinary Portland cement.

Graphene Nanoplatelets Industry 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 2025-2033. Our report has categorized the market based on application.

Breakup by Application:

- Composites
- Energy and Power
- Conductive Inks and Coatings
- Others

Composites accounts for the majority of the market share

The report has provided a detailed breakup and analysis of the market based on the application. This includes composites, energy and power, conductive inks and coatings, and others. According to the report, composites represented the largest segment.

Composites dominate the market largely due to the exceptional properties imparted by graphene nanoplatelets. These properties, such as enhanced strength, stiffness, and conductivity, are crucial in sectors including aerospace, automotive, and sports equipment. Apart from this, the incorporation of graphene nanoplatelets leads to the development of materials that are lighter and stronger, with advanced functional properties. Furthermore, the ongoing research aimed at optimizing the dispersion and functionality of graphene within composite matrices broadens their applicability in various industrial sectors which is propelling the graphene nanoplatelets market revenue. For instance, in March 2022, Composites UK, the leading trade organization that unites companies and promotes a coordinated voice to help the UK composites industry advance, announced Applied Graphene Materials' membership which will help expand the company's network among composites experts.

Breakup by Region:

- North America
 - o□ United States
 - o□ Canada
- Asia-Pacific
 - o□ China
 - o□ Japan
 - o□ India
 - o□ South Korea
 - o□ Australia
 - o□ Indonesia
 - o□ Others
- Europe
 - o□ Germany
 - o□ France

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- o United Kingdom
- o Italy
- o Spain
- o Russia
- o Others
- Latin America
- o Brazil
- o Mexico
- o Others
- Middle East and Africa

North America leads the market, accounting for the largest graphene nanoplatelets market share

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

North America is the dominant regional segment owing to the developed technological background and considerable expenditures on the outcomes of research and development concerning graphene. These key factors, combined with the active participation of pioneer producers and consumers of graphene nanoplatelets in many applications, including composite materials, energy storage, and electronics, ensure leading position of North America. Moreover, the existing legislative basis that promotes innovative and environmentally friendly substances enhances the expansion of graphene nanoplatelets within many industries, showing stable growth in the North American segment. For instance, in July 2021, Thomas Swan & Co. Ltd., a specialty chemical maker, unveiled a joint venture with Mason Graphite Inc. The companies will form a new entity, named Black Swan Graphene (BSG) to build a large-scale commercial production plant of graphene in Quebec, Canada.

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 graphene nanoplatelets industry include ACS Materials LLC, Applied Graphene Materials plc, Cambridge Nanosystems Ltd., Cheap Tubes, CVD Equipment Corporation, Directa Plus plc, Global Graphene Group, NanoXplore Inc, Strem Chemicals Inc., Thomas Swan & Co. Ltd, XGSciences and Xiamen Knano Graphene Technology Corporation Limited.

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

Presently, key players are expanding production capacity, creating strategic partnerships, and investing in research and development to discover new products and solutions to improve the quality of graphene nanoplatelets. As a result, it is possible to improve the performance of the product, which will facilitate their successful implementation in industries including automotive, aerospace, and energy. Moreover, companies continue to invest in creating new environmentally friendly products, making production safe for industrial processes and the end consumer. For instance, in March 2022, Graphene Manufacturing Group Ltd. unveiled that GMG and Wood admitted to a non-binding Letter of Intent, to agree on the terms of binding agreements for Wood to design and distribute major graphene manufacturing expansion projects.

Key Questions Answered in This Report

1. What was the size of the global graphene nanoplatelets market in 2024?
2. What is the expected growth rate of the global graphene nanoplatelets market during 2025-2033?
3. What has been the impact of COVID-19 on the global graphene nanoplatelets market?
4. What are the key factors driving the global graphene nanoplatelets market?
5. What is the breakup of the global graphene nanoplatelets market based on the application?

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- 6.What are the key regions in the global graphene nanoplatelets market?
- 7.Who are the key players/companies in the global graphene nanoplatelets market?

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