Graphene Market by Type (Bulk Graphene and Monolayer Graphene), Source, Application, End-use Industry (Automotive & Transportation, Aerospace & Defense, Electrical & Electronics, and Construction) and Region - Global Forecast to 2030

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Report description:

The graphene market is estimated at USD 1.00 billion in 2024 and is projected to reach USD 3.58 billion by 2030, at a CAGR of 24.0% from 2025 to 2030. Bulk graphene dominated the overall market due to its unique combination of extraordinary properties and potential applications across various industries. Bulk graphene is preferred over monolayer graphene for various reasons, specifically due to production scalability, cost-effectiveness, and application versatility.

https://mnmimg.marketsandmarkets.com/Images/graphene-market-img-overview.webp

''By source, graphite accounted for the largest share of the overall graphene market in 2024.''
Graphite is among the most widely available forms of carbon on earth. Due to its abundance, graphite is one of the most readily available raw materials for the mass production of graphene. Businesses involved in graphite mining have an upper hand as they are masters of the supply of this precious resource, since they determine who can access the supply. The synthesis of graphene from graphite through mechanical or chemical exfoliation methods is comparatively easier than other sources. Graphite can be cleaved into monolayers or few-layer sheets based on simple techniques like sonification or chemical treatments.

''The composites segment is estimated to be the largest application of graphene during the forecast period.''
The composites segment is the leading application of graphene. Graphene-enhanced composites possess attractive mechanical, electrical, and thermal properties. This makes graphene composites particularly appealing for industries where lightweight yet stiff materials are required.

''The electronics end-use industry is projected to register the highest growth, in terms of value, during the forecast period.'
The electronics industry is the fastest-growing end-use segment in the overall market. The outstanding electrical conductivity and high electron mobility make it an ideal material for various electronic components. This capability allows for the development of faster and more efficient devices that may be critical in a market focused on performance and speed.
Constant research and development are increasing the potential applications of graphene in electronics. Some of the recent innovations, like graphene field-effect transistors (GFETs), promise to revolutionize semiconductor technology and offer superior performance compared to conventional silicon-based devices. While breakthroughs continue, the reception of graphene in new electronic technologies should gain greater momentum.
"Asia Pacific is estimated to account for the largest market share."
Asia Pacific accounted for the largest share of the graphene market due to increasing demand for graphene across various sectors, especially in electronics and automotive industries.
The electronics sector is one of the key growth areas driving the adoption of graphene in the Asia Pacific region. Graphene's unique properties, such as strength-to-weight ratio and excellent electrical conductivity, are increasingly utilized in the automotive and aerospace sectors.
The competitive environment in Asia Pacific is characterized by numerous players investing heavily in R&D to enhance their product offerings. Companies such as Ningbo Morsh Technology Co., Ltd., First Graphene, and The Sixth Element (Changzhou) Materials Technology Co., Ltd. are expanding their market presence through strategic partnerships and collaborations, which further drives the market growth.
This study has been validated through primary interviews with industry experts globally. These primary sources have been divided based on the following three categories:
- By Company Type - Tier 1 - 60%, Tier 2 - 20%, and Tier 3 - 20%
- By Designation - C Level - 33%, Director Level - 33%, and Others - 34%
- By Region - North America - 20%, Europe - 25%, Asia Pacific - 25%, Middle East & Africa -20%, South America - 10%.
The report provides a comprehensive analysis of company profiles:
Prominent companies include Graphenea S.A (Spain), First Graphene (Australia), NanoXplore Inc. (Canada), Avanzare Innovacion Technologica S.L. (Spain), Global Graphene Group (US), Directa Plus S.P.A (Italy), Haydale Graphene Industries Plc (UK), ACS Material (US), The Sixth Element (Changzhou) Materials Technology Co. Ltd. (China), Xiamen Knano Graphene Technology Co., Ltd. (China), Universal Matter, Inc. (Canada), Petroliam Nasional Berhad (Petronas, Malaysia), Thomas Swan & Co. Ltd. (England), and Danish Graphene ApS (Denmark).

Research Coverage

This research report categorizes the graphene market by source (Graphite, Graphite Oxide, Reduced Graphite Oxide, and Other Sources), by type (Bulk Graphene and Monolayer Graphene), by application (Composite, Energy Harvesting & Storage, Paints, Coatings & Inks, Electronics, and Other Applications), by end-use industry (Automotive & Transportation, Aerospace & Defense, Electronics, Construction, and Other End-use Industries), and by region (North America, Europe, Asia Pacific, Middle East & Africa, and Latin America). The scope of the report includes detailed information about the major factors influencing the growth of the graphene market, such as drivers, restraints, challenges, and opportunities. A thorough examination of the key industry players has been conducted to provide insights into their business overview, solutions, and services, key strategies, contracts, partnerships, and agreements. New product and service launches, mergers & acquisitions, and recent developments in the graphene market are all covered. This report includes a competitive analysis of upcoming startups in the graphene market ecosystem.
Reasons to buy this report:

The report will help the leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall graphene market and the subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report also

helps stakeholders understand the pulse of the market and provides them with information on key market drivers, restraints, challenges, and opportunities.
The report provides insights on the following pointers:

- Analysis of key drivers (Growing demand in key end-use industries and supportive government policies in major graphite-exporting countries for boosting graphene production), restraints (Difficulty in mass production and lack of energy band-gap in graphene materials), opportunities (Rising demand in energy storage applications due to exceptional properties and rising use in next generation electronics due to exceptional properties), and challenges (Lack of standardization in graphene industry and high production cost) influencing the growth of the graphene market

- Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the graphene market

- Market Development: Comprehensive information about lucrative markets - the report analyses the graphene market across varied regions.

- Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the graphene market

- Competitive Assessment: In-depth assessment of market shares, growth strategies and service offerings of leading players, such as Graphenea S.A (Spain), First Graphene (Australia), NanoXplore Inc. (Canada), Avanzare Innovacion Technologica S.L. (Spain), Global Graphene Group (US), Directa Plus S.P.A (Italy), Haydale Graphene Industries Plc (UK), ACS Material (US), The Sixth Element (Changzhou) Materials Technology Co. Ltd. (China), Xiamen Knano Graphene Technology Co., Ltd. (China), Universal Matter, Inc. (Canada), Petroliam Nasional Berhad (Petronas, Malaysia), Thomas Swan & Co. Ltd. (England), and Danish Graphene ApS (Denmark) in the graphene market

Table of Contents:

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