

**Graphene Coatings Market By Application (Scratch Resistant coatings, Corrosion Resistant Coatings, Anti Fouling Coatings, Pollution Adsorption Coatings, Flame Retardant coatings, Others), By end use Industry (Automotive, Marine, Medical, Industrial, Electrical and electronics, Others): Global Opportunity Analysis and Industry Forecast, 2021-2031**

Market Report | 2022-08-01 | 350 pages | Allied Market Research

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**Report description:**

The global graphene coatings market was valued at \$1.4 million in 2021, and is projected to reach \$17.9 million by 2031, growing at a CAGR of 29.9% from 2022 to 2031.

Graphene is a thin layer of tightly packed carbon atoms connected in a hexagonal lattice. Since its discovery, substantial study has been undertaken on graphene and its uses in different industries including automotive, aerospace, defense, and electronics. Graphene is an excellent conductor of heat and electricity and has a very interesting light-absorbing ability. Graphene cannot form a coating it is chemically inert and non-reactive so it must be processed in a very specific way that can enable it to form a coating that can adhere it to a finished product. These graphene coatings serve as an alternative to steel and diamond since they are 200% stronger and more durable than other materials. Its use in laptop screens, memory chips, and mobile phone screens is made possible by its better electrical conductivity and thermal properties.

Graphene coating is becoming more popular as various R&D projects are undertaken to improve product performance. A team of researchers from the Institute Superior Tecnico's Institute for Plasmas and Nuclear Fusion (IPFN) has reported a new process for fabricating free-standing graphene coatings using plasma technology, at a lower cost of production than other existing market solutions. The "Process, reactor, and system for fabrication of free-standing two-dimensional nanostructures using plasma technology" received the first international patent. Researchers from the University of Massachusetts Amherst also contributed and have demonstrated an advance use of graphene coating for electro kinetic bio sample processing and analysis that could allow microchip devices to become smaller and achieve results faster. These key research factors are contributing to the growth

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of the graphene coating market with increase in demand for renewable, lightweight and flexible materials, thermal conductivity, heat and pressure resistant products, and energy storage devices. Increased awareness of printed electronics, aerospace requirements, enhance electronics industry innovation and integration with nanotechnology, automotive and energy industries will further drive the demand for graphene coatings.

A significant disadvantage of graphene coating is its high-cost effectiveness and complexity. The graphene coating market is declining due to rising limitations and negative factors of graphene such as toxic chemicals are used at high temperatures to produce graphene, resulting in graphene showing signs of some poisonous qualities, graphene coating is stuck to everything and is a messy stuff, and graphene cannot survive oxygen and heat. It is critical to avoid using graphene powder since it has a natural tendency to agglomerate. Graphene coating has numerous applications in the aerospace and automotive industries. For instance, it can be used for lighting, energy storage, de-icing, and lightning protection, among other things, not only for civil and military aircraft, but also for unmanned vehicles, spacecraft, and satellites. Coatings, EMI shielding, thermal management, light weighting, sensors, enhanced road tires, composite reinforcement, and fuel storage functions are a few of the external and interior automobile applications for graphene coating. Graphene-modified polyurethane foam, adhesives, batteries, and under-the-hood components have found commercial success. Awareness is also developing in other fields; however, education is required to increase end-user understanding of the differences between graphene materials and graphene manufacturers. TBA Protective Solutions, which offers transparent, conductive acrylic, flexible polyurethane, and water-based epoxy as protective coatings, is one provider of graphene-containing coatings. Global Graphene Group provides graphene-containing insulating coatings, conductive coatings and inks, and anti-corrosion paints (primers and topcoats). Talga, based in Perth, Australia, has developed a graphene addition for marine coatings with the goal of enhancing corrosion resistance, minimizing loss. The rising need for effective applications is expected to fuel demand for graphene coating.

Graphene coatings are in significant demand in countries including China, Japan, and South Korea. The demand for graphene coating in the area is largely driven by the market's expanding industrial applications. The global graphene coatings market is segmented into application, end-use industry and region. Depending on application, the market is classified into scratch resistant coatings, corrosion resistant coatings, anti-fouling coatings, pollution adsorption coatings, flame retardant coatings and others. On the basis of end-use industry, it is categorized into automotive, marine, medical, industrial, electrical and electronics and others. Region wise, the market is studied across North America, Europe, Asia-Pacific, and LAMEA.

The major players operating in the global graphene coatings market are ACS Material, Advance Industrial Coatings LLC, Applied Graphene Materials, Artdeshine Pte. Ltd, Directa Plus S.p.A , G6 Materials Corp, Graphenea, Graphite Central, Haydale Graphene Industries Plc, KNV'S Incorporation, NanoXplore Inc., Supervac Industries LLP, Surface Protective Solutions, Thomas Swan & Co. Ltd., and XG Sciences. Other players operating in the market are AI Coating, Dongguan Sheerfond New Material Co. Ltd, Ethos, and China Carbon Graphite Inc.

#### IMPACT OF COVID-19 ON THE GLOBAL GRAPHENE COATINGS MARKET

-COVID-19 has spread across the globe and effected almost all aspects of life.

-The international aerospace industry was likely the most severely hit by the COVID-19 pandemic: airlines, airports, and other market participants all faced significant revenue losses, prompting a vigorous, short-term, and disruptive reaction.

-As result manufacturers of graphene-based coatings supplying to this industry were heavily affected which ultimately caused a drop in the demand.

-During the pandemic, liquidity-strapped automotive suppliers gave in to rapidly deteriorating market conditions, causing enormous disruption and disastrous effects throughout the world's car manufacturing business. As a result, the application of graphene coatings in this business also faced difficulties.

-However, after the pandemic, as the demand will return to normal after the restrictions were lifted, market participants in this market have explored for measures to minimize the pandemic's impact on their business.

-As the restrictions are lifted, the demand from automotive industry is increasing, which is increasing the demand for graphene coatings.

#### Key Benefits For Stakeholders

-This report provides a quantitative analysis of the market segments, current trends, estimations, and dynamics of the graphene coatings market analysis from 2021 to 2031 to identify the prevailing graphene coatings market opportunities.

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- The market research is offered along with information related to key drivers, restraints, and opportunities.
- Porter's five forces analysis highlights the potency of buyers and suppliers to enable stakeholders make profit-oriented business decisions and strengthen their supplier-buyer network.
- In-depth analysis of the graphene coatings market segmentation assists to determine the prevailing market opportunities.
- Major countries in each region are mapped according to their revenue contribution to the global market.
- Market player positioning facilitates benchmarking and provides a clear understanding of the present position of the market players.
- The report includes the analysis of the regional as well as global graphene coatings market trends, key players, market segments, application areas, and market growth strategies.

#### Key Market Segments

##### By Application

- Others
- Scratch Resistant coatings
- Corrosion Resistant Coatings
- Anti Fouling Coatings
- Pollution Adsorption Coatings
- Flame Retardant coatings

##### By end use Industry

- Automotive
- Marine
- Medical
- Industrial
- Electrical and electronics
- Others

##### By Region

- North America
- U.S.
- Canada
- Mexico
- Europe
- Germany
- France
- UK
- Spain
- Italy
- Rest Of Europe
- Asia-Pacific
- India
- China
- Japan
- South Korea
- Australia
- Rest Of Asia-Pacific
- LAMEA
- Brazil
- Saudi Arabia
- South Africa

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- Key Market Players
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- Directa Plus S.p.A
- G6 Materials Corp
- Graphenea
- Graphite Central
- Haydale Graphene Industries Plc
- KNV'S Incorporation
- NanoXplore Inc
- Supervac Industries LLP
- Surface Protective Solutions
- thomas swan & co. ltd.
- XG Sciences

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