

Fullerene Market Report by Product (C60, C70, C76, and Others), Shape (Bucky Balls, Nanotubes (Single-Wall and Multiple-Wall), Nano-Rods), Production Method (CVD/CCVD Process, Arc Discharge Method, Laser Ablation of Graphite, and Others), End Use Industry (Electrical and Electronics, Pharmaceuticals, Medical, Aerospace and Defense, Energy, and Others), and Region 2024-2032

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Report description:

The global fullerene market size reached US\$ 489.5 Million in 2023. Looking forward, IMARC Group expects the market to reach US\$ 773.9 Million by 2032, exhibiting a growth rate (CAGR) of 5.1% during 2024-2032.

Fullerenes are a class of carbon allotropes that have a hollow core and can have a varying molecular structure, resembling a cylindrical tube, sphere or cube through their bonds. They are commonly utilized in the production of polymer electronics, antioxidants, biocatalysts, skin creams and biopharmaceuticals. Some fullerenes also have anti-viral properties that suppress the replication of Human Immunodeficiency Virus (HIV) and delay the onset of diseases such as AIDS. In photodynamic therapy, they are used as a non-toxic and light-sensitive compound that can specifically target malignant or altered cells.

Healthcare and cosmetics are among the key industries driving the growth of the fullerene market. There is a growing demand for spherical shaped and water-soluble derivatives of fullerenes in these sectors. Fullerenes are added to cosmetic products to prevent skin damage, premature aging and rashes caused by exposure to artificial chemicals. In the healthcare and pharmaceutical sectors, the rising application of cancer imaging and therapy procedures is driving the demand for fullerenes. The distinct carbon structure of their polymers is proven to have extensive remedial properties in cancer treatment as well as for various other critical ailments. Additionally, the increasing adoption of solar energy systems is further boosting the market growth. Fullerenes and their derivatives can be used in organic photovoltaic (PV) cells as they act as electron acceptors and donor

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materials. Moreover, extensive applications across the electronics, automotive, aerospace and defense sectors, where fullerenes are used as an alternative to steel, are expected to drive the market further.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global fullerene market report, along with forecasts at the global, regional and country levels from 2024-2032. Our report has categorized the market based on product, shape, production method and end use industry.

Breakup by Product:

- C60
- C70
- C76
- Others

Breakup by Shape:

- Bucky Balls
- Nanotubes (Single-Wall and Multiple-Wall)
- Nano-Rods

Breakup by Production Method:

- CVD/CCVD Process
- Arc Discharge Method
- Laser Ablation of Graphite
- Others

Breakup by End Use Industry:

- Electrical and Electronics
- Pharmaceuticals
- Medical
- Aerospace and Defense
- Energy
- Others

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

Competitive Landscape:

The competitive landscape of the industry has also been examined with some of the key players being ApNano Materials Inc. (Nanotech Industrial Solutions), BuckyUSA, IoLiTec - Ionic Liquid Technologies GmbH, Mitsubishi Chemical Holdings, MTR Ltd., Nano-C, SES Research Inc. and TermUSA.

Key Questions Answered in This Report:

- How has the global fullerene market performed so far and how will it perform in the coming years?

- What has been the impact of COVID-19 on the global fullerene market?

- What are the key regional markets?

- What is the breakup of the market based on the product?

- What is the breakup of the market based on the shape?

- What is the breakup of the market based on the production method?

- What is the breakup of the market based on the end use industry?

- What are the various stages in the value chain of the industry?

- What are the key driving factors and challenges in the industry?

- What is the structure of the global fullerene market and who are the key players?

- What is the degree of competition in the industry?

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