

The Global Market for Single-Walled Carbon Nanotubes 2023-2033

<https://marketpublishers.com/r/G12FC756A5AEN.html>

Date: April 2023

Pages: 93

Price: US\$ 1,150.00 (Single User License)

ID: G12FC756A5AEN

Abstracts

Single-walled carbon nanotubes (SWCNTs) are one-atom-thick rolled-up graphene sheets, typically with diameters between 0.6 and 2.0 nm and lengths up to 500 mm. Owing to their unique structure, they exhibit excellent electronic, thermal, and mechanical properties including:

Incredible strength (they are 100 times stronger than steel at one sixth the weight);

Electrical conductivity as high as copper, but five times lighter;

Thermal conductivity as high as diamond (up to 1000oC);

Huge surface area;

Highest length-to-diameter ratio;

Flexibility;

Thermal stability;

Lightweight;

Chemical inertness (SWCNTs are compatible with almost all materials).

Due to these unique properties, SWCNTs have great potential for utilisation as a multi-

functional additive and as the basis for creating new products with previously unattainable properties. And this can be achieved using a very low concentration of SWCNTs – starting from 0.01% of the total weight of the material. However, SWCNTs have not been used in industry until recently owing to the absence of technology for their mass production and, as a consequence, their high price. This has recently changed due to improvements in manufacturing and capacity increases and they are finding wider application in thin-film transistors, fuel cells, lithium-ion batteries, rubber, composites, coatings and more.

Report contents include:

Properties of SWCNTs.

Assessment of economic prospects of the market for SWCNTs.

Market trends impacting the market for SWCNTs.

Main applications and markets for SWCNTs. Markets covered include composites, coatings, rubber additives, batteries, fuel cells, supercapacitors, construction materials, thermal interface materials (TIM), plastics, electronics, power cables, adhesives and lubricants.

Demand for SWCNTs by market.

SWCNT market demand forecast (tons), 2018-2033.

Annual production capacity of the key SWCNT producers

In-depth SWCNT producer profiles. Producers profiled include Chasmod Advanced Materials, Korbon, Meijo Nano Carbon, OCSiAl and Zeon Nano Technology.

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