

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

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## 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 interphase 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 Chasm Advanced Materials, Korbon, Meijo Nano Carbon, OCSiAl and Zeon Nano Technology.

## Contents

### **1 INTRODUCTION**

- 1.1 Single-walled carbon nanotubes properties
- 1.2 Advantages of SWCNTs over other carbon-based materials as conductive additives
- 1.3 Other types of carbon nanotubes and related materials

### **2 SINGLE-WALLED CARBON NANOTUBES PATENTS**

### **3 THE GLOBAL MARKET FOR SINGLE-WALLED CARBON NANOTUBES**

- 3.1 Multi-walled carbon nanotubes (MWCNTs) market
  - 3.1.1 MWCNT production capacities in 2023
  - 3.1.2 Market demand, metric tons (MT)
- 3.2 Single-walled carbon nanotubes (SWCNTs) market
  - 3.2.1 Global SWCNT market consumption
  - 3.2.2 Production capacities

### **4 GLOBAL SWCNT DEMAND BY MARKET, FOR MAIN APPLICATIONS**

#### **4.1 BATTERIES**

- 4.1.1 Market overview
- 4.1.2 Global market demand for SWCNTs in batteries

#### **4.2 COMPOSITES**

- 4.2.1 Market overview
  - 4.2.1.1 Fiber-based polymer composite parts
  - 4.2.1.2 Global market demand for SWCNTs in thermosets and thermoplastics
- 4.2.2 Metal-matrix composites
  - 4.2.2.1 Market overview
  - 4.2.2.2 Global market demand for SWCNTs in metal-matrix composites

#### **4.3 COATINGS**

- 4.3.1 Market overview
- 4.3.2 Global market demand for SWCNTs in coatings

#### **4.4 RUBBER ADDITIVES**

- 4.4.1 Tyres
  - 4.4.1.1 Market overview
  - 4.4.1.2 Global market demand for SWCNTs in tyres
- 4.4.2 Rubber technical goods

4.4.2.1 Market overview

4.4.2.2 Global market demand for SWCNTs in rubber technical goods

#### 4.5 FUEL CELLS

4.5.1 Market overview

4.5.2 Global market demand for SWCNTs in fuel cell

#### 4.6 CONSTRUCTION MATERIALS

4.6.1 Cement

4.6.1.1 Market overview

4.6.1.2 Global market demand for SWCNTs in cement

#### 4.7 ANTI-STATIC PLASTICS

4.7.1 Market overview

4.7.2 Global market demand for SWCNTs in anti-static plastics

#### 4.8 TRANSPARENT CONDUCTIVE FILMS

4.8.1 Market overview

4.8.2 Global market demand for SWCNTs in transparent conductive films

#### 4.9 POWER CABLES

4.9.1 Market overview

4.9.2 Global market demand for SWCNTs in power cables

#### 4.10 ADHESIVES

4.10.1 Market overview

4.10.2 Global market demand for SWCNTs in adhesives

#### 4.11 LUBRICANTS

4.11.1 Market overview

4.11.2 Global market demand for SWCNTs in lubricants

#### 4.12 THERMAL INTERFACE MATERIALS

4.12.1 Market overview

#### 4.13 SUPERCAPACITORS

4.13.1 Market overview

## **5 SINGLE-WALLED CARBON NANOTUBES COMPANY PROFILES 69 (17 COMPANY PROFILES)**

## **6 REFERENCES**

## List Of Tables

### LIST OF TABLES

Table 1. Typical properties of SWCNT and MWCNT.

Table 2. Comparison of carbon-based additives in terms of the main parameters influencing their value proposition as a conductive additive.

Table 3. Other types of carbon nanotubes.

Table 4. Main SWCNT patent assignees.

Table 5. Location of SWCNT patent publications 2008-2022.

Table 6. Annual production capacity of the key MWCNT producers in 2023 (MT).

Table 7. SWCNT market demand forecast (metric tons), 2018-2033.

Table 8. Annual production capacity of SWCNT producers in 2023 (KG).

Table 9. Markets and applications for SWCNTs.

Table 10. Market overview for SWCNTs in batteries.

Table 11. Global market demand for SWCNTs in batteries based on penetration forecasts 2017- 2033, metric tons.

Table 12. Advanced composites, properties and materials.

Table 13. Market and applications for SWCNTs in fiber-based composite parts.

Table 14. Global market demand for SWCNTs in thermosets based on penetration forecasts 2017-2033, tons.

Table 15. Global market demand for SWCNTs in thermoplastics based on penetration forecasts 2017-2033, tons.

Table 16. Market and applications for SWCNTs in metal matrix composites.

Table 17. Global market demand for SWCNT based products in metal-matrix composites based on penetration forecasts 2017-2033, tons.

Table 18. Market and applications for SWCNTs in coatings.

Table 19. Global market demand for SWCNT based products in coatings based on penetration forecasts 2017-2033, tons.

Table 20. Market and applications for carbon nanotubes in tyres.

Table 21. Global market demand for SWCNT based products in tyres based on penetration forecasts 2017-2033, tons.

Table 22. Market and applications for SWCNTs in rubber technical goods.

Table 23. Global market demand for SWCNT based products in rubber technical goods, based on penetration forecasts 2017-2033, tons.

Table 24. Electrical conductivity of different catalyst supports compared to carbon nanotubes.

Table 25. Market and applications for SWCNTs in fuel cells.

Table 26. Global market demand for SWCNT based products in fuel cells, based on

penetration forecasts, 2017-2033, tons.

Table 27. Market overview of SWCNTs in the cement industry.

Table 28. Global market demand for SWCNT based products in cement, based on penetration forecasts, 2017-2033, tons.

Table 29. Market and applications for SWCNTs in anti-static plastics

Table 30. Global market demand for SWCNT based products in anti-static plastics, based on penetration forecasts, 2017-2033, tons.

Table 31. Market and applications for SWCNTs in transparent conductive films.

Table 32. Global market demand for SWCNT based products in transparent conductive films, based on penetration forecasts, 2017-2033, tons.

Table 33. Market and applications for SWCNTs in power cables.

Table 34. Global market demand for SWCNTs conductive additives in power cables based on penetration forecasts 2017-2033, tons.

Table 35. Applications and benefits of SWCNTs in adhesives.

Table 36. Market and applications for SWCNTs in adhesives.

Table 37. Global market demand for SWCNTs in adhesives based on penetration forecasts 2017- 2033, tons.

Table 38. Nanomaterial lubricant products.

Table 39. Market and applications for SWCNTs in lubricants.

Table 40. Global market demand for SWCNTs in lubricants based on penetration forecasts 2017-2033, tons.

Table 41. Application of SWCNTs in thermal interface materials.

Table 42. Application of SWCNTs in supercapacitors.

Table 43. Chasm SWCNT products.

Table 44. Thomas Swan SWCNT production.

Table 45. Ex-producers of SWCNTs.

## List Of Figures

### LIST OF FIGURES

Figure 1. Types of single-walled carbon nanotubes.

Figure 2. Double-walled carbon nanotube bundle cross-section micrograph and model.

Figure 3. TEM image of FWNTs.

Figure 4. Schematic representation of carbon nanohorns.

Figure 5. TEM image of carbon onion.

Figure 6. Schematic of Boron Nitride nanotubes (BNNTs). Alternating B and N atoms are shown in blue and red.

Figure 7. SWCNT patent applications 2001-2021.

Figure 8. Demand for MWCNT by application in 2022.

Figure 9. Market demand for carbon nanotubes by market, 2018-2033 (metric tons).

Figure 10. SWCNT market demand forecast (metric tons), 2018-2033.

Figure 11. Global market for SWCNTs in batteries based on penetration forecasts 2017-2033, metric tons.

Figure 12. Global market demand for SWCNTs in thermosets based on penetration forecasts 2017-2033, tons.

Figure 13. Global market demand for SWCNTs in thermoplastics based on penetration forecasts 2017-2033, tons.

Figure 14. Global market demand for SWCNT based products in metal-matrix composites based on penetration forecasts 2017-2033, tons.

Figure 15. Global market demand for SWCNT based products in coatings based on penetration forecasts 2017-2033, tons.

Figure 16. Global market demand for SWCNT based products in tyres based on penetration forecasts 2017-2033, tons.

Figure 17. Global market demand for SWCNT based products in rubber technical goods based on penetration forecasts 2017-2033, tons.

Figure 18. Global market demand for SWCNT based products in fuel cells, based on penetration forecasts 2017-2033, tons.

Figure 19. Global market demand for SWCNT based products in cement, based on penetration forecasts, 2017-2033, tons.

Figure 20. Global market demand for SWCNT based products in anti-static plastics, based on penetration forecasts, 2017-2033, tons.

Figure 21. Global market demand for SWCNT based products in transparent conductive films, based on penetration forecasts, 2017-2033, tons.

Figure 22. Global market demand for SWCNTs conductive additives in power cables based on penetration forecasts 2017-2033, tons.

Figure 23. Global market demand for SWCNTs in adhesives based on penetration forecasts 2017- 2033, tons.

Figure 24. Global market demand for SWCNTs in lubricants based on penetration forecasts 2017-2033, tons.

Figure 25. Schematic of a fluidized bed reactor which is able to scale up the generation of SWNTs using the CoMoCAT process.

Figure 26. Carbon nanotube paint product.

Figure 27. MEIJO eDIPS product.

Figure 28. HiPCO® Reactor.

Figure 29. Smell iX16 multi-channel gas detector chip.

Figure 30. The Smell Inspector.

Figure 31. Toray CNF printed RFID.



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