

The Global Market for Graphite 2023-2033

<https://marketpublishers.com/r/GA423E033AF2EN.html>

Date: May 2023

Pages: 0

Price: US\$ 1,250.00 (Single User License)

ID: GA423E033AF2EN

Abstracts

Graphite is a critical raw material for the green transition and demand is increasing in markets including electric vehicles and green energy storage. Based on current production, demand from these markets will result in a significant supply shortfall by 2033 unless mining and production is greatly expanded. Future energy needs will require supply of raw materials for the development of low-carbon technologies. Graphite is viewed as a critical material for decarbonizing transportation and heavy industry, resulting in high market growth in the coming years.

Graphite is used across multiple industries such as automotive, steel-making, powder metallurgy, fuel cells, and flame retardants. Graphite is the dominant active anode material used in lithium-ion batteries for electric vehicles (EV). Huge growth in demand for batteries in electric vehicles and energy storage systems has underpinned recent changes in the graphite market landscape.

Desirable properties of graphite include:

good conductor of heat and electricity.

high regular stiffness and strength.

maintains firmness and strength up to temperature more than 3600°C

highly lubricating material with chemical inertness and corrosion resistance.

Graphite is classified as natural and synthetic. Natural graphite is further classified into three principal types, crystalline small flake graphite (or flake graphite), crystalline vein or lump graphite, and amorphous graphite (very fine flake graphite), which have

different physical properties, appearance, chemical composition, and impurities. Natural graphite can be mined in multiple countries. Synthetic graphite is produced from oil or coal-based needle coke and is preferred in the production of electric arc furnaces (EAFs) for steelmaking. Battery producers can use both synthetic and natural graphite as their raw material.

Report contents include:

In-depth analysis of the global market for graphite.

Analysis of types of graphite, markets, applications and producers.

Recent market activity, drivers and trends.

Graphite pricing, historical, current and forecasts.

Market tonnage data-historical (2010-2022), estimates for 2023, and projections to 2033.

Regional market analysis.

Market share analysis based on type of graphite, end-use industry, and geographic region.

Graphite market in China.

Profiles of 89 companies. Companies profiled include Black Rock Mining, Evolution Energy, GrafTech International, Gratomic, Graphite India, Leading Edge Materials, NextSource Materials, Nippon Carbon, Reflex Advanced Materials Corp., Renascor Resources, SEC Carbon, SGL Group, Showa Denko, Syrah Resources, Talga Group, Tirupati Carbon & Graphite, Tokai Carbon, and Volt Resources.

Contents

1 RESEARCH METHODOLOGY

2 INTRODUCTION

- 2.1 Types of graphite
 - 2.1.1 Natural vs synthetic graphite
- 2.2 Natural graphite
 - 2.2.1 Classification
 - 2.2.2 Processing
 - 2.2.3 Flake
 - 2.2.3.1 Grades
 - 2.2.3.2 Applications
 - 2.2.3.3 Spherical graphite
 - 2.2.3.4 Expandable graphite
 - 2.2.4 Amorphous graphite
 - 2.2.4.1 Applications
 - 2.2.5 Crystalline vein graphite
 - 2.2.5.1 Applications
- 2.3 Synthetic graphite
 - 2.3.1 Classification
 - 2.3.1.1 Primary synthetic graphite
 - 2.3.1.2 Secondary synthetic graphite
 - 2.3.2 Processing
 - 2.3.2.1 Processing for battery anodes
 - 2.3.3 Issues with synthetic graphite production
 - 2.3.4 Isostatic Graphite
 - 2.3.4.1 Description
 - 2.3.4.2 Markets
 - 2.3.4.3 Producers and production capacities
 - 2.3.5 Graphite electrodes
 - 2.3.6 Extruded Graphite
 - 2.3.7 Vibration Molded Graphite
 - 2.3.8 Die-molded graphite
- 2.4 New technologies
- 2.5 Recycling of graphite materials
- 2.6 Applications of graphite
- 2.7 Graphite pricing (ton)

2.8 Graphene

2.8.1 CVD Graphene

2.8.2 Graphene nanoplatelets

2.8.3 Graphene oxide and reduced Graphene Oxide

3 MARKETS FOR GRAPHITE

3.1 Global production of graphite

3.1.1 Global mine production and reserves of natural graphite

3.1.2 Global graphite production in tonnes, 2016-2022

3.1.3 Estimated global graphite production in tonnes, 2023-2033

3.1.4 Synthetic graphite supply

3.2 Global market demand for graphite by end use market 2016-2033, tonnes

3.2.1 Natural graphite

3.2.2 Synthetic graphite

3.3 Demand for graphite by end use markets, 2022

3.4 Demand for graphite by end use markets, 2033

3.5 Demand by region

3.5.1 China

3.5.1.1 Diversification of global supply and production

3.5.2 Asia-Pacific

3.5.2.1 Synthetic graphite

3.5.2.2 Natural graphite

3.5.3 North America

3.5.3.1 Synthetic graphite

3.5.3.2 Natural graphite

3.5.4 Europe

3.5.4.1 Synthetic graphite

3.5.4.2 Natural graphite

3.5.5 Brazil

3.6 Factors that aid graphite market growth

3.7 Factors that hinder graphite market growth

3.8 Graphite market in 2022

3.9 The graphite market in 2023 and beyond

3.10 Main market players

3.10.1 Natural graphite

3.10.2 Synthetic graphite

3.11 Market supply chain

3.12 Lithium-ion batteries

- 3.12.1 Gigafactories
- 3.12.2 Anode material in electric vehicles
 - 3.12.2.1 Properties
 - 3.12.2.2 Market demand
- 3.12.3 Recent trends in the automotive market and EVs
- 3.12.4 Higher costs and tight supply
- 3.12.5 Forecast for EVs
- 3.12.6 Graphite alternatives for batteries
- 3.13 Refractory manufacturing (Steel market)
 - 3.13.1 Steel market trends and graphite growth
 - 3.13.2 Carbon Sources for refractories
 - 3.13.3 Electric arc furnaces in steelmaking
- 3.14 Recarburising
- 3.15 Graphite shapes
- 3.16 Electronics
 - 3.16.1 Thermal management
- 3.17 Electrode materials for fuel cells
- 3.18 Nuclear
- 3.19 Lubricants
- 3.20 Friction materials
- 3.21 Flame retardants
- 3.22 Solar and wind turbines

4 COMPANY PROFILES 94 (89 COMPANY PROFILES)

5 REFERENCES

List Of Tables

LIST OF TABLES

- Table 1. Selected physical properties of graphite.
- Table 2. Characteristics of natural and synthetic graphite.
- Table 3. Comparison between Natural and Synthetic Graphite.
- Table 4. Classification of natural graphite with its characteristics.
- Table 5. Characteristics of synthetic graphite.
- Table 6: Main markets and applications of isostatic graphite.
- Table 7. Current or planned production capacities for isostatic graphite.
- Table 8. Main graphite electrode producers and capacities (MT/year).
- Table 9. Markets and applications of graphite.
- Table 10. Classification, application and price of graphite as a function of size.
- Table 11. Properties of graphene, properties of competing materials, applications thereof.
- Table 12. Types of graphene and typical prices.
- Table 13. Applications of GO and rGO.
- Table 14. Estimated global mine Production of natural graphite 2020-2022, by country (tons).
- Table 15. Global production of graphite 2016-2022 MT.
- Table 16. Estimated global graphite production in tonnes, 2023-2033.
- Table 17. Demand for synthetic graphite in Asia-Pacific 2016-2033, tonnes.
- Table 18. Demand for natural graphite in Asia-Pacific 2016-2033, tonnes.
- Table 19. Demand for synthetic graphite in North America 2016-2033, tonnes.
- Table 20. Demand for natural graphite in the USA 2016-2033, tonnes.
- Table 21. Demand for synthetic graphite in Europe 2018-2033, tonnes.
- Table 22. Demand for natural graphite in Europe 2016-2033, tonnes.
- Table 23. Main natural graphite producers.
- Table 24. Main synthetic graphite producers.
- Table 25. Key minerals in an EV battery.
- Table 26. Current and planned gigafactories.
- Table 27. Overview of thermal management materials.
- Table 28. Next Resources graphite flake products.

List Of Figures

LIST OF FIGURES

- Figure 1. Structure of graphite.
- Figure 2. Comparison of SEM micrographs of sphere-shaped natural graphite (NG; after several processing steps) and synthetic graphite (SG).
- Figure 3. Overview of graphite production, processing and applications.
- Figure 4. Flake graphite.
- Figure 5. Applications of flake graphite.
- Figure 6. Amorphous graphite.
- Figure 7. Vein graphite.
- Figure 8: Isostatic pressed graphite.
- Figure 9. Global market for graphite EAFs, 2018-2033 (MT).
- Figure 10. Extruded graphite rod.
- Figure 11. Vibration Molded Graphite.
- Figure 12. Die-molded graphite products.
- Figure 13. Graphene layer structure schematic.
- Figure 14. Illustrative procedure of the Scotch-tape based micromechanical cleavage of HOPG.
- Figure 15. Graphite and graphene.
- Figure 16. Types of CVD methods.
- Figure 17. Schematic of the manufacture of GnPs starting from natural graphite.
- Figure 18. Global production of graphite 2016-2022 MT.
- Figure 19. Estimated global graphite production in tonnes, 2023-2033.
- Figure 20. Global market demand for natural graphite by end use market 2016-2033, tonnes.
- Figure 21. Global market demand for synthetic graphite by end use market 2016-2033, tonnes.
- Figure 22. Consumption of graphite by end use markets, 2022.
- Figure 23. Demand for graphite by end use markets, 2033.
- Figure 24. Global consumption of graphite by type and region, 2022
- Figure 25. Consumption of synthetic graphite in Asia-Pacific 2016-2033, tonnes.
- Figure 26. Consumption of natural graphite in Asia-Pacific 2016-2033, tonnes.
- Figure 27. Demand for synthetic graphite in North America 2016-2033, tonnes.
- Figure 28. Demand for natural graphite in the USA 2018-2033, tonnes.
- Figure 29. Consumption of synthetic graphite in Europe 2015-2021, tonnes.
- Figure 30. Consumption of natural graphite in Europe 2015-2021, tonnes.
- Figure 31. Graphite market supply chain (battery market).

- Figure 32. Graphite battery market demand, by type 2016-2033, tonnes.
- Figure 33. 2 Graphite: Content and share of total cell weight, for common types of lithium-ion cells for battery-powered electric vehicles.
- Figure 34. Graphite as active anode material in lithium-ion cell.
- Figure 35. Global electric car sales and share of global car sales, 2010-2023.
- Figure 36. Graphite market demand for refractories, by type 2016-2033, tonnes.
- Figure 37. Schematic illustration of an EAF.
- Figure 38. Graphite electrodes demand 2018-2033 in EAFs (million MT).
- Figure 39. Graphite market demand for recarburising, by type 2016-2033, tonnes.
- Figure 40. Graphite market demand for recarburising, by type 2016-2033, tonnes.
- Figure 41. Graphite market demand for friction products by type 2016-2033, tonnes.

I would like to order

Product name: The Global Market for Graphite 2023-2033

Product link: <https://marketpublishers.com/r/GA423E033AF2EN.html>

Price: US\$ 1,250.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/GA423E033AF2EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970