

Global Phosphorus-doped Hard Carbon Supply, Demand and Key Producers, 2026-2032

<https://marketpublishers.com/r/G51993878252EN.html>

Date: May 2026

Pages: 122

Price: US\$ 4,480.00 (Single User License)

ID: G51993878252EN

Abstracts

The global Phosphorus-doped Hard Carbon market size is expected to reach \$ 1062 million by 2032, rising at a market growth of 19.6% CAGR during the forecast period (2026-2032).

Phosphorus-doped Hard Carbon is an advanced carbon anode material in which phosphorus atoms are intentionally introduced into the disordered carbon structure (typically derived from biomass, polymers, or pitch) to modify its electronic configuration, enlarge interlayer spacing, and create additional active sites, thereby improving sodium-ion or lithium-ion storage capacity, rate capability, and initial coulombic efficiency. From a supply chain perspective, the upstream consists of carbon precursors (e.g., lignin, sucrose, phenolic resins, petroleum pitch) and phosphorus sources (such as phosphoric acid, ammonium phosphate, or organophosphorus compounds); the midstream involves carbonization and high-temperature pyrolysis (800-1,500°C) combined with doping processes (in-situ or post-treatment activation) to form P-doped hard carbon with controlled porosity and defect structures; and the downstream includes integration into battery anode formulations (with binders and conductive additives), electrode fabrication, and deployment in sodium-ion batteries, next-generation lithium-ion systems, and hybrid energy storage devices, serving end-use sectors such as grid-scale energy storage, electric vehicles (especially low-cost or cold-climate applications), and consumer electronics. In 2025, global Phosphorus-doped Hard Carbon output was about 60,000 tons with 90,000 tons of capacity, average prices of USD 4,500 - 8,000 per ton, and gross margins around 36%.

This report studies the global Phosphorus-doped Hard Carbon production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Phosphorus-doped Hard Carbon and provides market size (US\$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of Phosphorus-doped Hard Carbon that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global Phosphorus-doped Hard Carbon total production and demand, 2021-2032, (Tons)

Global Phosphorus-doped Hard Carbon total production value, 2021-2032, (USD Million)

Global Phosphorus-doped Hard Carbon production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Tons), (based on production site)

Global Phosphorus-doped Hard Carbon consumption by region & country, CAGR, 2021-2032 & (Tons)

U.S. VS China: Phosphorus-doped Hard Carbon domestic production, consumption, key domestic manufacturers and share

Global Phosphorus-doped Hard Carbon production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Tons)

Global Phosphorus-doped Hard Carbon production by Type, production, value, CAGR, 2021-2032, (USD Million) & (Tons)

Global Phosphorus-doped Hard Carbon production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Tons)

This report profiles key players in the global Phosphorus-doped Hard Carbon market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include BTR New Material (China), Ningbo Shanshan (China), Shanghai Putailai (China), Shenzhen Xiangfenghua (China), Fujian Yuanli (China), Fujian Xinsen (China), Shengquan Group (China), Hunan Shinzoom Technology (China), Iopsilion (South Korea), Kuraray (Japan), etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Phosphorus-doped Hard Carbon market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US\$ Millions), volume (production, consumption) & (Tons) and average price (US\$/Ton) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global Phosphorus-doped Hard Carbon Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global Phosphorus-doped Hard Carbon Market, Segmentation by Type:

Biomass-derived P-HC

Polymer-derived P-HC

Pitch-derived P-HC

Global Phosphorus-doped Hard Carbon Market, Segmentation by Doping Method:

In-situ Doping

Post-treatment Doping

Global Phosphorus-doped Hard Carbon Market, Segmentation by Application:

Energy Storage

Grid Infrastructure

Electric Vehicle

Consumer Electronic

Industrial

Others

Companies Profiled:

BTR New Material (China)

Ningbo Shanshan (China)

Shanghai Putailai (China)

Shenzhen Xiangfenghua (China)

Fujian Yuanli (China)

Fujian Xinsen (China)

Shengquan Group (China)

Hunan Shinzoom Technology (China)

Iopsilion (South Korea)

Kuraray (Japan)

JFE Chemical (Japan)

Kureha Corporation (Japan)

Sumitomo Chemical (Japan)

Stora Enso (Finland)

Key Questions Answered:

1. How big is the global Phosphorus-doped Hard Carbon market?
2. What is the demand of the global Phosphorus-doped Hard Carbon market?
3. What is the year over year growth of the global Phosphorus-doped Hard Carbon market?
4. What is the production and production value of the global Phosphorus-doped Hard Carbon market?
5. Who are the key producers in the global Phosphorus-doped Hard Carbon market?
6. What are the growth factors driving the market demand?

Contents

1 SUPPLY SUMMARY

- 1.1 Phosphorus-doped Hard Carbon Introduction
- 1.2 World Phosphorus-doped Hard Carbon Supply & Forecast
 - 1.2.1 World Phosphorus-doped Hard Carbon Production Value (2021 & 2025 & 2032)
 - 1.2.2 World Phosphorus-doped Hard Carbon Production (2021-2032)
 - 1.2.3 World Phosphorus-doped Hard Carbon Pricing Trends (2021-2032)
- 1.3 World Phosphorus-doped Hard Carbon Production by Region (Based on Production Site)
 - 1.3.1 World Phosphorus-doped Hard Carbon Production Value by Region (2021-2032)
 - 1.3.2 World Phosphorus-doped Hard Carbon Production by Region (2021-2032)
 - 1.3.3 World Phosphorus-doped Hard Carbon Average Price by Region (2021-2032)
 - 1.3.4 North America Phosphorus-doped Hard Carbon Production (2021-2032)
 - 1.3.5 Europe Phosphorus-doped Hard Carbon Production (2021-2032)
 - 1.3.6 China Phosphorus-doped Hard Carbon Production (2021-2032)
 - 1.3.7 Japan Phosphorus-doped Hard Carbon Production (2021-2032)
 - 1.3.8 India Phosphorus-doped Hard Carbon Production (2021-2032)
 - 1.3.9 Southeast Asia Phosphorus-doped Hard Carbon Production (2021-2032)
- 1.4 Market Drivers, Restraints and Trends
 - 1.4.1 Phosphorus-doped Hard Carbon Market Drivers
 - 1.4.2 Factors Affecting Demand
 - 1.4.3 Phosphorus-doped Hard Carbon Major Market Trends

2 DEMAND SUMMARY

- 2.1 World Phosphorus-doped Hard Carbon Demand (2021-2032)
- 2.2 World Phosphorus-doped Hard Carbon Consumption by Region
 - 2.2.1 World Phosphorus-doped Hard Carbon Consumption by Region (2021-2026)
 - 2.2.2 World Phosphorus-doped Hard Carbon Consumption Forecast by Region (2027-2032)
- 2.3 United States Phosphorus-doped Hard Carbon Consumption (2021-2032)
- 2.4 China Phosphorus-doped Hard Carbon Consumption (2021-2032)
- 2.5 Europe Phosphorus-doped Hard Carbon Consumption (2021-2032)
- 2.6 Japan Phosphorus-doped Hard Carbon Consumption (2021-2032)
- 2.7 South Korea Phosphorus-doped Hard Carbon Consumption (2021-2032)
- 2.8 ASEAN Phosphorus-doped Hard Carbon Consumption (2021-2032)
- 2.9 India Phosphorus-doped Hard Carbon Consumption (2021-2032)

3 WORLD MANUFACTURERS COMPETITIVE ANALYSIS

- 3.1 World Phosphorus-doped Hard Carbon Production Value by Manufacturer (2021-2026)
- 3.2 World Phosphorus-doped Hard Carbon Production by Manufacturer (2021-2026)
- 3.3 World Phosphorus-doped Hard Carbon Average Price by Manufacturer (2021-2026)
- 3.4 Phosphorus-doped Hard Carbon Company Evaluation Quadrant
- 3.5 Industry Rank and Concentration Rate (CR)
 - 3.5.1 Global Phosphorus-doped Hard Carbon Industry Rank of Major Manufacturers
 - 3.5.2 Global Concentration Ratios (CR4) for Phosphorus-doped Hard Carbon in 2025
 - 3.5.3 Global Concentration Ratios (CR8) for Phosphorus-doped Hard Carbon in 2025
- 3.6 Phosphorus-doped Hard Carbon Market: Overall Company Footprint Analysis
 - 3.6.1 Phosphorus-doped Hard Carbon Market: Region Footprint
 - 3.6.2 Phosphorus-doped Hard Carbon Market: Company Product Type Footprint
 - 3.6.3 Phosphorus-doped Hard Carbon Market: Company Product Application Footprint
- 3.7 Competitive Environment
 - 3.7.1 Historical Structure of the Industry
 - 3.7.2 Barriers of Market Entry
 - 3.7.3 Factors of Competition
- 3.8 New Entrant and Capacity Expansion Plans
- 3.9 Mergers, Acquisition, Agreements, and Collaborations

4 UNITED STATES VS CHINA VS REST OF THE WORLD

- 4.1 United States VS China: Phosphorus-doped Hard Carbon Production Value Comparison
 - 4.1.1 United States VS China: Phosphorus-doped Hard Carbon Production Value Comparison (2021 & 2025 & 2032)
 - 4.1.2 United States VS China: Phosphorus-doped Hard Carbon Production Value Market Share Comparison (2021 & 2025 & 2032)
- 4.2 United States VS China: Phosphorus-doped Hard Carbon Production Comparison
 - 4.2.1 United States VS China: Phosphorus-doped Hard Carbon Production Comparison (2021 & 2025 & 2032)
 - 4.2.2 United States VS China: Phosphorus-doped Hard Carbon Production Market Share Comparison (2021 & 2025 & 2032)
- 4.3 United States VS China: Phosphorus-doped Hard Carbon Consumption Comparison
 - 4.3.1 United States VS China: Phosphorus-doped Hard Carbon Consumption

Comparison (2021 & 2025 & 2032)

4.3.2 United States VS China: Phosphorus-doped Hard Carbon Consumption Market Share Comparison (2021 & 2025 & 2032)

4.4 United States Based Phosphorus-doped Hard Carbon Manufacturers and Market Share, 2021-2026

4.4.1 United States Based Phosphorus-doped Hard Carbon Manufacturers, Headquarters and Production Site (States, Country)

4.4.2 United States Based Manufacturers Phosphorus-doped Hard Carbon Production Value (2021-2026)

4.4.3 United States Based Manufacturers Phosphorus-doped Hard Carbon Production (2021-2026)

4.5 China Based Phosphorus-doped Hard Carbon Manufacturers and Market Share

4.5.1 China Based Phosphorus-doped Hard Carbon Manufacturers, Headquarters and Production Site (Province, Country)

4.5.2 China Based Manufacturers Phosphorus-doped Hard Carbon Production Value (2021-2026)

4.5.3 China Based Manufacturers Phosphorus-doped Hard Carbon Production (2021-2026)

4.6 Rest of World Based Phosphorus-doped Hard Carbon Manufacturers and Market Share, 2021-2026

4.6.1 Rest of World Based Phosphorus-doped Hard Carbon Manufacturers, Headquarters and Production Site (State, Country)

4.6.2 Rest of World Based Manufacturers Phosphorus-doped Hard Carbon Production Value (2021-2026)

4.6.3 Rest of World Based Manufacturers Phosphorus-doped Hard Carbon Production (2021-2026)

5 MARKET ANALYSIS BY TYPE

5.1 World Phosphorus-doped Hard Carbon Market Size Overview by Type: 2021 VS 2025 VS 2032

5.2 Segment Introduction by Type

5.2.1 Biomass-derived P-HC

5.2.2 Polymer-derived P-HC

5.2.3 Pitch-derived P-HC

5.3 Market Segment by Type

5.3.1 World Phosphorus-doped Hard Carbon Production by Type (2021-2032)

5.3.2 World Phosphorus-doped Hard Carbon Production Value by Type (2021-2032)

5.3.3 World Phosphorus-doped Hard Carbon Average Price by Type (2021-2032)

6 MARKET ANALYSIS BY DOPING METHOD

6.1 World Phosphorus-doped Hard Carbon Market Size Overview by Doping Method: 2021 VS 2025 VS 2032

6.2 Segment Introduction by Doping Method

6.2.1 In-situ Doping

6.2.2 Post-treatment Doping

6.3 Market Segment by Doping Method

6.3.1 World Phosphorus-doped Hard Carbon Production by Doping Method (2021-2032)

6.3.2 World Phosphorus-doped Hard Carbon Production Value by Doping Method (2021-2032)

6.3.3 World Phosphorus-doped Hard Carbon Average Price by Doping Method (2021-2032)

7 MARKET ANALYSIS BY APPLICATION

7.1 World Phosphorus-doped Hard Carbon Market Size Overview by Application: 2021 VS 2025 VS 2032

7.2 Segment Introduction by Application

7.2.1 Energy Storage

7.2.2 Grid Infrastructure

7.2.3 Electric Vehicle

7.2.4 Consumer Electronic

7.2.5 Industrial

7.2.6 Others

7.3 Market Segment by Application

7.3.1 World Phosphorus-doped Hard Carbon Production by Application (2021-2032)

7.3.2 World Phosphorus-doped Hard Carbon Production Value by Application (2021-2032)

7.3.3 World Phosphorus-doped Hard Carbon Average Price by Application (2021-2032)

8 COMPANY PROFILES

8.1 BTR New Material (China)

8.1.1 BTR New Material (China) Details

8.1.2 BTR New Material (China) Major Business

- 8.1.3 BTR New Material (China) Phosphorus-doped Hard Carbon Product and Services
- 8.1.4 BTR New Material (China) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
- 8.1.5 BTR New Material (China) Recent Developments/Updates
- 8.1.6 BTR New Material (China) Competitive Strengths & Weaknesses
- 8.2 Ningbo Shanshan (China)
 - 8.2.1 Ningbo Shanshan (China) Details
 - 8.2.2 Ningbo Shanshan (China) Major Business
 - 8.2.3 Ningbo Shanshan (China) Phosphorus-doped Hard Carbon Product and Services
 - 8.2.4 Ningbo Shanshan (China) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.2.5 Ningbo Shanshan (China) Recent Developments/Updates
 - 8.2.6 Ningbo Shanshan (China) Competitive Strengths & Weaknesses
- 8.3 Shanghai Putailai (China)
 - 8.3.1 Shanghai Putailai (China) Details
 - 8.3.2 Shanghai Putailai (China) Major Business
 - 8.3.3 Shanghai Putailai (China) Phosphorus-doped Hard Carbon Product and Services
 - 8.3.4 Shanghai Putailai (China) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.3.5 Shanghai Putailai (China) Recent Developments/Updates
 - 8.3.6 Shanghai Putailai (China) Competitive Strengths & Weaknesses
- 8.4 Shenzhen Xiangfenghua (China)
 - 8.4.1 Shenzhen Xiangfenghua (China) Details
 - 8.4.2 Shenzhen Xiangfenghua (China) Major Business
 - 8.4.3 Shenzhen Xiangfenghua (China) Phosphorus-doped Hard Carbon Product and Services
 - 8.4.4 Shenzhen Xiangfenghua (China) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.4.5 Shenzhen Xiangfenghua (China) Recent Developments/Updates
 - 8.4.6 Shenzhen Xiangfenghua (China) Competitive Strengths & Weaknesses
- 8.5 Fujian Yuanli (China)
 - 8.5.1 Fujian Yuanli (China) Details
 - 8.5.2 Fujian Yuanli (China) Major Business
 - 8.5.3 Fujian Yuanli (China) Phosphorus-doped Hard Carbon Product and Services
 - 8.5.4 Fujian Yuanli (China) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.5.5 Fujian Yuanli (China) Recent Developments/Updates

- 8.5.6 Fujian Yuanli (China) Competitive Strengths & Weaknesses
- 8.6 Fujian Xinsen (China)
 - 8.6.1 Fujian Xinsen (China) Details
 - 8.6.2 Fujian Xinsen (China) Major Business
 - 8.6.3 Fujian Xinsen (China) Phosphorus-doped Hard Carbon Product and Services
 - 8.6.4 Fujian Xinsen (China) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.6.5 Fujian Xinsen (China) Recent Developments/Updates
 - 8.6.6 Fujian Xinsen (China) Competitive Strengths & Weaknesses
- 8.7 Shengquan Group (China)
 - 8.7.1 Shengquan Group (China) Details
 - 8.7.2 Shengquan Group (China) Major Business
 - 8.7.3 Shengquan Group (China) Phosphorus-doped Hard Carbon Product and Services
 - 8.7.4 Shengquan Group (China) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.7.5 Shengquan Group (China) Recent Developments/Updates
 - 8.7.6 Shengquan Group (China) Competitive Strengths & Weaknesses
- 8.8 Hunan Shinzoom Technology (China)
 - 8.8.1 Hunan Shinzoom Technology (China) Details
 - 8.8.2 Hunan Shinzoom Technology (China) Major Business
 - 8.8.3 Hunan Shinzoom Technology (China) Phosphorus-doped Hard Carbon Product and Services
 - 8.8.4 Hunan Shinzoom Technology (China) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.8.5 Hunan Shinzoom Technology (China) Recent Developments/Updates
 - 8.8.6 Hunan Shinzoom Technology (China) Competitive Strengths & Weaknesses
- 8.9 Iopsilion (South Korea)
 - 8.9.1 Iopsilion (South Korea) Details
 - 8.9.2 Iopsilion (South Korea) Major Business
 - 8.9.3 Iopsilion (South Korea) Phosphorus-doped Hard Carbon Product and Services
 - 8.9.4 Iopsilion (South Korea) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.9.5 Iopsilion (South Korea) Recent Developments/Updates
 - 8.9.6 Iopsilion (South Korea) Competitive Strengths & Weaknesses
- 8.10 Kuraray (Japan)
 - 8.10.1 Kuraray (Japan) Details
 - 8.10.2 Kuraray (Japan) Major Business
 - 8.10.3 Kuraray (Japan) Phosphorus-doped Hard Carbon Product and Services

- 8.10.4 Kuraray (Japan) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
- 8.10.5 Kuraray (Japan) Recent Developments/Updates
- 8.10.6 Kuraray (Japan) Competitive Strengths & Weaknesses
- 8.11 JFE Chemical (Japan)
 - 8.11.1 JFE Chemical (Japan) Details
 - 8.11.2 JFE Chemical (Japan) Major Business
 - 8.11.3 JFE Chemical (Japan) Phosphorus-doped Hard Carbon Product and Services
 - 8.11.4 JFE Chemical (Japan) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.11.5 JFE Chemical (Japan) Recent Developments/Updates
 - 8.11.6 JFE Chemical (Japan) Competitive Strengths & Weaknesses
- 8.12 Kureha Corporation (Japan)
 - 8.12.1 Kureha Corporation (Japan) Details
 - 8.12.2 Kureha Corporation (Japan) Major Business
 - 8.12.3 Kureha Corporation (Japan) Phosphorus-doped Hard Carbon Product and Services
 - 8.12.4 Kureha Corporation (Japan) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.12.5 Kureha Corporation (Japan) Recent Developments/Updates
 - 8.12.6 Kureha Corporation (Japan) Competitive Strengths & Weaknesses
- 8.13 Sumitomo Chemical (Japan)
 - 8.13.1 Sumitomo Chemical (Japan) Details
 - 8.13.2 Sumitomo Chemical (Japan) Major Business
 - 8.13.3 Sumitomo Chemical (Japan) Phosphorus-doped Hard Carbon Product and Services
 - 8.13.4 Sumitomo Chemical (Japan) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.13.5 Sumitomo Chemical (Japan) Recent Developments/Updates
 - 8.13.6 Sumitomo Chemical (Japan) Competitive Strengths & Weaknesses
- 8.14 Stora Enso (Finland)
 - 8.14.1 Stora Enso (Finland) Details
 - 8.14.2 Stora Enso (Finland) Major Business
 - 8.14.3 Stora Enso (Finland) Phosphorus-doped Hard Carbon Product and Services
 - 8.14.4 Stora Enso (Finland) Phosphorus-doped Hard Carbon Production, Price, Value, Gross Margin and Market Share (2021-2026)
 - 8.14.5 Stora Enso (Finland) Recent Developments/Updates
 - 8.14.6 Stora Enso (Finland) Competitive Strengths & Weaknesses

9 INDUSTRY CHAIN ANALYSIS

- 9.1 Phosphorus-doped Hard Carbon Industry Chain
- 9.2 Phosphorus-doped Hard Carbon Upstream Analysis
 - 9.2.1 Phosphorus-doped Hard Carbon Core Raw Materials
 - 9.2.2 Main Manufacturers of Phosphorus-doped Hard Carbon Core Raw Materials
- 9.3 Midstream Analysis
- 9.4 Downstream Analysis
- 9.5 Phosphorus-doped Hard Carbon Production Mode
- 9.6 Phosphorus-doped Hard Carbon Procurement Model
- 9.7 Phosphorus-doped Hard Carbon Industry Sales Model and Sales Channels
 - 9.7.1 Phosphorus-doped Hard Carbon Sales Model
 - 9.7.2 Phosphorus-doped Hard Carbon Typical Distributors

10 RESEARCH FINDINGS AND CONCLUSION

11 APPENDIX

- 11.1 Methodology
- 11.2 Research Process and Data Source
- 11.3 Disclaimer

List Of Tables

LIST OF TABLES

Table 1. World Phosphorus-doped Hard Carbon Production Value by Region (2021, 2025 and 2032) & (USD Million)

Table 2. World Phosphorus-doped Hard Carbon Production Value by Region (2021-2026) & (USD Million)

Table 3. World Phosphorus-doped Hard Carbon Production Value by Region (2027-2032) & (USD Million)

Table 4. World Phosphorus-doped Hard Carbon Production Value Market Share by Region (2021-2026)

Table 5. World Phosphorus-doped Hard Carbon Production Value Market Share by Region (2027-2032)

Table 6. World Phosphorus-doped Hard Carbon Production by Region (2021-2026) & (Tons)

Table 7. World Phosphorus-doped Hard Carbon Production by Region (2027-2032) & (Tons)

Table 8. World Phosphorus-doped Hard Carbon Production Market Share by Region (2021-2026)

Table 9. World Phosphorus-doped Hard Carbon Production Market Share by Region (2027-2032)

Table 10. World Phosphorus-doped Hard Carbon Average Price by Region (2021-2026) & (US\$/Ton)

Table 11. World Phosphorus-doped Hard Carbon Average Price by Region (2027-2032) & (US\$/Ton)

Table 12. Phosphorus-doped Hard Carbon Major Market Trends

Table 13. World Phosphorus-doped Hard Carbon Consumption Growth Rate Forecast by Region (2021 & 2025 & 2032) & (Tons)

Table 14. World Phosphorus-doped Hard Carbon Consumption by Region (2021-2026) & (Tons)

Table 15. World Phosphorus-doped Hard Carbon Consumption Forecast by Region (2027-2032) & (Tons)

Table 16. World Phosphorus-doped Hard Carbon Production Value by Manufacturer (2021-2026) & (USD Million)

Table 17. Production Value Market Share of Key Phosphorus-doped Hard Carbon Producers in 2025

Table 18. World Phosphorus-doped Hard Carbon Production by Manufacturer (2021-2026) & (Tons)

Table 19. Production Market Share of Key Phosphorus-doped Hard Carbon Producers in 2025

Table 20. World Phosphorus-doped Hard Carbon Average Price by Manufacturer (2021-2026) & (US\$/Ton)

Table 21. Global Phosphorus-doped Hard Carbon Company Evaluation Quadrant

Table 22. World Phosphorus-doped Hard Carbon Industry Rank of Major Manufacturers, Based on Production Value in 2025

Table 23. Head Office and Phosphorus-doped Hard Carbon Production Site of Key Manufacturer

Table 24. Phosphorus-doped Hard Carbon Market: Company Product Type Footprint

Table 25. Phosphorus-doped Hard Carbon Market: Company Product Application Footprint

Table 26. Phosphorus-doped Hard Carbon Competitive Factors

Table 27. Phosphorus-doped Hard Carbon New Entrant and Capacity Expansion Plans

Table 28. Phosphorus-doped Hard Carbon Mergers & Acquisitions Activity

Table 29. United States VS China Phosphorus-doped Hard Carbon Production Value Comparison, (2021 & 2025 & 2032) & (USD Million)

Table 30. United States VS China Phosphorus-doped Hard Carbon Production Comparison, (2021 & 2025 & 2032) & (Tons)

Table 31. United States VS China Phosphorus-doped Hard Carbon Consumption Comparison, (2021 & 2025 & 2032) & (Tons)

Table 32. United States Based Phosphorus-doped Hard Carbon Manufacturers, Headquarters and Production Site (States, Country)

Table 33. United States Based Manufacturers Phosphorus-doped Hard Carbon Production Value, (2021-2026) & (USD Million)

Table 34. United States Based Manufacturers Phosphorus-doped Hard Carbon Production Value Market Share (2021-2026)

Table 35. United States Based Manufacturers Phosphorus-doped Hard Carbon Production (2021-2026) & (Tons)

Table 36. United States Based Manufacturers Phosphorus-doped Hard Carbon Production Market Share (2021-2026)

Table 37. China Based Phosphorus-doped Hard Carbon Manufacturers, Headquarters and Production Site (Province, Country)

Table 38. China Based Manufacturers Phosphorus-doped Hard Carbon Production Value, (2021-2026) & (USD Million)

Table 39. China Based Manufacturers Phosphorus-doped Hard Carbon Production Value Market Share (2021-2026)

Table 40. China Based Manufacturers Phosphorus-doped Hard Carbon Production, (2021-2026) & (Tons)

Table 41. China Based Manufacturers Phosphorus-doped Hard Carbon Production Market Share (2021-2026)

Table 42. Rest of World Based Phosphorus-doped Hard Carbon Manufacturers, Headquarters and Production Site (State, Country)

Table 43. Rest of World Based Manufacturers Phosphorus-doped Hard Carbon Production Value, (2021-2026) & (USD Million)

Table 44. Rest of World Based Manufacturers Phosphorus-doped Hard Carbon Production Value Market Share (2021-2026)

Table 45. Rest of World Based Manufacturers Phosphorus-doped Hard Carbon Production, (2021-2026) & (Tons)

Table 46. Rest of World Based Manufacturers Phosphorus-doped Hard Carbon Production Market Share (2021-2026)

Table 47. World Phosphorus-doped Hard Carbon Production Value by Type, (USD Million), 2021 & 2025 & 2032

Table 48. World Phosphorus-doped Hard Carbon Production by Type (2021-2026) & (Tons)

Table 49. World Phosphorus-doped Hard Carbon Production by Type (2027-2032) & (Tons)

Table 50. World Phosphorus-doped Hard Carbon Production Value by Type (2021-2026) & (USD Million)

Table 51. World Phosphorus-doped Hard Carbon Production Value by Type (2027-2032) & (USD Million)

Table 52. World Phosphorus-doped Hard Carbon Average Price by Type (2021-2026) & (US\$/Ton)

Table 53. World Phosphorus-doped Hard Carbon Average Price by Type (2027-2032) & (US\$/Ton)

Table 54. World Phosphorus-doped Hard Carbon Production Value by Doping Method, (USD Million), 2021 & 2025 & 2032

Table 55. World Phosphorus-doped Hard Carbon Production by Doping Method (2021-2026) & (Tons)

Table 56. World Phosphorus-doped Hard Carbon Production by Doping Method (2027-2032) & (Tons)

Table 57. World Phosphorus-doped Hard Carbon Production Value by Doping Method (2021-2026) & (USD Million)

Table 58. World Phosphorus-doped Hard Carbon Production Value by Doping Method (2027-2032) & (USD Million)

Table 59. World Phosphorus-doped Hard Carbon Average Price by Doping Method (2021-2026) & (US\$/Ton)

Table 60. World Phosphorus-doped Hard Carbon Average Price by Doping Method

(2027-2032) & (US\$/Ton)

Table 61. World Phosphorus-doped Hard Carbon Production Value by Application, (USD Million), 2021 & 2025 & 2032

Table 62. World Phosphorus-doped Hard Carbon Production by Application (2021-2026) & (Tons)

Table 63. World Phosphorus-doped Hard Carbon Production by Application (2027-2032) & (Tons)

Table 64. World Phosphorus-doped Hard Carbon Production Value by Application (2021-2026) & (USD Million)

Table 65. World Phosphorus-doped Hard Carbon Production Value by Application (2027-2032) & (USD Million)

Table 66. World Phosphorus-doped Hard Carbon Average Price by Application (2021-2026) & (US\$/Ton)

Table 67. World Phosphorus-doped Hard Carbon Average Price by Application (2027-2032) & (US\$/Ton)

Table 68. BTR New Material (China) Basic Information, Manufacturing Base and Competitors

Table 69. BTR New Material (China) Major Business

Table 70. BTR New Material (China) Phosphorus-doped Hard Carbon Product and Services

Table 71. BTR New Material (China) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 72. BTR New Material (China) Recent Developments/Updates

Table 73. BTR New Material (China) Competitive Strengths & Weaknesses

Table 74. Ningbo Shanshan (China) Basic Information, Manufacturing Base and Competitors

Table 75. Ningbo Shanshan (China) Major Business

Table 76. Ningbo Shanshan (China) Phosphorus-doped Hard Carbon Product and Services

Table 77. Ningbo Shanshan (China) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 78. Ningbo Shanshan (China) Recent Developments/Updates

Table 79. Ningbo Shanshan (China) Competitive Strengths & Weaknesses

Table 80. Shanghai Putailai (China) Basic Information, Manufacturing Base and Competitors

Table 81. Shanghai Putailai (China) Major Business

Table 82. Shanghai Putailai (China) Phosphorus-doped Hard Carbon Product and

Services

Table 83. Shanghai Putailai (China) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 84. Shanghai Putailai (China) Recent Developments/Updates

Table 85. Shanghai Putailai (China) Competitive Strengths & Weaknesses

Table 86. Shenzhen Xiangfenghua (China) Basic Information, Manufacturing Base and Competitors

Table 87. Shenzhen Xiangfenghua (China) Major Business

Table 88. Shenzhen Xiangfenghua (China) Phosphorus-doped Hard Carbon Product and Services

Table 89. Shenzhen Xiangfenghua (China) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 90. Shenzhen Xiangfenghua (China) Recent Developments/Updates

Table 91. Shenzhen Xiangfenghua (China) Competitive Strengths & Weaknesses

Table 92. Fujian Yuanli (China) Basic Information, Manufacturing Base and Competitors

Table 93. Fujian Yuanli (China) Major Business

Table 94. Fujian Yuanli (China) Phosphorus-doped Hard Carbon Product and Services

Table 95. Fujian Yuanli (China) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 96. Fujian Yuanli (China) Recent Developments/Updates

Table 97. Fujian Yuanli (China) Competitive Strengths & Weaknesses

Table 98. Fujian Xinsen (China) Basic Information, Manufacturing Base and Competitors

Table 99. Fujian Xinsen (China) Major Business

Table 100. Fujian Xinsen (China) Phosphorus-doped Hard Carbon Product and Services

Table 101. Fujian Xinsen (China) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 102. Fujian Xinsen (China) Recent Developments/Updates

Table 103. Fujian Xinsen (China) Competitive Strengths & Weaknesses

Table 104. Shengquan Group (China) Basic Information, Manufacturing Base and Competitors

Table 105. Shengquan Group (China) Major Business

Table 106. Shengquan Group (China) Phosphorus-doped Hard Carbon Product and Services

Table 107. Shengquan Group (China) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 108. Shengquan Group (China) Recent Developments/Updates

Table 109. Shengquan Group (China) Competitive Strengths & Weaknesses

Table 110. Hunan Shinzoom Technology (China) Basic Information, Manufacturing Base and Competitors

Table 111. Hunan Shinzoom Technology (China) Major Business

Table 112. Hunan Shinzoom Technology (China) Phosphorus-doped Hard Carbon Product and Services

Table 113. Hunan Shinzoom Technology (China) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 114. Hunan Shinzoom Technology (China) Recent Developments/Updates

Table 115. Hunan Shinzoom Technology (China) Competitive Strengths & Weaknesses

Table 116. Iopsilion (South Korea) Basic Information, Manufacturing Base and Competitors

Table 117. Iopsilion (South Korea) Major Business

Table 118. Iopsilion (South Korea) Phosphorus-doped Hard Carbon Product and Services

Table 119. Iopsilion (South Korea) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 120. Iopsilion (South Korea) Recent Developments/Updates

Table 121. Iopsilion (South Korea) Competitive Strengths & Weaknesses

Table 122. Kuraray (Japan) Basic Information, Manufacturing Base and Competitors

Table 123. Kuraray (Japan) Major Business

Table 124. Kuraray (Japan) Phosphorus-doped Hard Carbon Product and Services

Table 125. Kuraray (Japan) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 126. Kuraray (Japan) Recent Developments/Updates

Table 127. Kuraray (Japan) Competitive Strengths & Weaknesses

Table 128. JFE Chemical (Japan) Basic Information, Manufacturing Base and Competitors

Table 129. JFE Chemical (Japan) Major Business

Table 130. JFE Chemical (Japan) Phosphorus-doped Hard Carbon Product and Services

Table 131. JFE Chemical (Japan) Phosphorus-doped Hard Carbon Production (Tons),

Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 132. JFE Chemical (Japan) Recent Developments/Updates

Table 133. JFE Chemical (Japan) Competitive Strengths & Weaknesses

Table 134. Kureha Corporation (Japan) Basic Information, Manufacturing Base and Competitors

Table 135. Kureha Corporation (Japan) Major Business

Table 136. Kureha Corporation (Japan) Phosphorus-doped Hard Carbon Product and Services

Table 137. Kureha Corporation (Japan) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 138. Kureha Corporation (Japan) Recent Developments/Updates

Table 139. Kureha Corporation (Japan) Competitive Strengths & Weaknesses

Table 140. Sumitomo Chemical (Japan) Basic Information, Manufacturing Base and Competitors

Table 141. Sumitomo Chemical (Japan) Major Business

Table 142. Sumitomo Chemical (Japan) Phosphorus-doped Hard Carbon Product and Services

Table 143. Sumitomo Chemical (Japan) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 144. Sumitomo Chemical (Japan) Recent Developments/Updates

Table 145. Sumitomo Chemical (Japan) Competitive Strengths & Weaknesses

Table 146. Stora Enso (Finland) Basic Information, Manufacturing Base and Competitors

Table 147. Stora Enso (Finland) Major Business

Table 148. Stora Enso (Finland) Phosphorus-doped Hard Carbon Product and Services

Table 149. Stora Enso (Finland) Phosphorus-doped Hard Carbon Production (Tons), Price (US\$/Ton), Production Value (USD Million), Gross Margin and Market Share (2021-2026)

Table 150. Stora Enso (Finland) Recent Developments/Updates

Table 151. Stora Enso (Finland) Competitive Strengths & Weaknesses

Table 152. Global Key Players of Phosphorus-doped Hard Carbon Upstream (Raw Materials)

Table 153. Global Phosphorus-doped Hard Carbon Typical Customers

Table 154. Phosphorus-doped Hard Carbon Typical Distributors

List Of Figures

LIST OF FIGURES

Figure 1. Phosphorus-doped Hard Carbon Picture

Figure 2. World Phosphorus-doped Hard Carbon Production Value: 2021 & 2025 & 2032, (USD Million)

Figure 3. World Phosphorus-doped Hard Carbon Production Value and Forecast (2021-2032) & (USD Million)

Figure 4. World Phosphorus-doped Hard Carbon Production (2021-2032) & (Tons)

Figure 5. World Phosphorus-doped Hard Carbon Average Price (2021-2032) & (US\$/Ton)

Figure 6. World Phosphorus-doped Hard Carbon Production Value Market Share by Region (2021-2032)

Figure 7. World Phosphorus-doped Hard Carbon Production Market Share by Region (2021-2032)

Figure 8. North America Phosphorus-doped Hard Carbon Production (2021-2032) & (Tons)

Figure 9. Europe Phosphorus-doped Hard Carbon Production (2021-2032) & (Tons)

Figure 10. China Phosphorus-doped Hard Carbon Production (2021-2032) & (Tons)

Figure 11. Japan Phosphorus-doped Hard Carbon Production (2021-2032) & (Tons)

Figure 12. India Phosphorus-doped Hard Carbon Production (2021-2032) & (Tons)

Figure 13. Southeast Asia Phosphorus-doped Hard Carbon Production (2021-2032) & (Tons)

Figure 14. Phosphorus-doped Hard Carbon Market Drivers

Figure 15. Factors Affecting Demand

Figure 16. World Phosphorus-doped Hard Carbon Consumption (2021-2032) & (Tons)

Figure 17. World Phosphorus-doped Hard Carbon Consumption Market Share by Region (2021-2032)

Figure 18. United States Phosphorus-doped Hard Carbon Consumption (2021-2032) & (Tons)

Figure 19. China Phosphorus-doped Hard Carbon Consumption (2021-2032) & (Tons)

Figure 20. Europe Phosphorus-doped Hard Carbon Consumption (2021-2032) & (Tons)

Figure 21. Japan Phosphorus-doped Hard Carbon Consumption (2021-2032) & (Tons)

Figure 22. South Korea Phosphorus-doped Hard Carbon Consumption (2021-2032) & (Tons)

Figure 23. ASEAN Phosphorus-doped Hard Carbon Consumption (2021-2032) & (Tons)

Figure 24. India Phosphorus-doped Hard Carbon Consumption (2021-2032) & (Tons)

Figure 25. Producer Shipments of Phosphorus-doped Hard Carbon by Manufacturer

Revenue (\$MM) and Market Share (%): 2025

Figure 26. Global Four-firm Concentration Ratios (CR4) for Phosphorus-doped Hard Carbon Markets in 2025

Figure 27. Global Four-firm Concentration Ratios (CR8) for Phosphorus-doped Hard Carbon Markets in 2025

Figure 28. United States VS China: Phosphorus-doped Hard Carbon Production Value Market Share Comparison (2021 & 2025 & 2032)

Figure 29. United States VS China: Phosphorus-doped Hard Carbon Production Market Share Comparison (2021 & 2025 & 2032)

Figure 30. United States VS China: Phosphorus-doped Hard Carbon Consumption Market Share Comparison (2021 & 2025 & 2032)

Figure 31. United States Based Manufacturers Phosphorus-doped Hard Carbon Production Market Share 2025

Figure 32. China Based Manufacturers Phosphorus-doped Hard Carbon Production Market Share 2025

Figure 33. Rest of World Based Manufacturers Phosphorus-doped Hard Carbon Production Market Share 2025

Figure 34. World Phosphorus-doped Hard Carbon Production Value by Type, (USD Million), 2021 & 2025 & 2032

Figure 35. World Phosphorus-doped Hard Carbon Production Value Market Share by Type in 2025

Figure 36. Biomass-derived P-HC

Figure 37. Polymer-derived P-HC

Figure 38. Pitch-derived P-HC

Figure 39. World Phosphorus-doped Hard Carbon Production Market Share by Type (2021-2032)

Figure 40. World Phosphorus-doped Hard Carbon Production Value Market Share by Type (2021-2032)

Figure 41. World Phosphorus-doped Hard Carbon Average Price by Type (2021-2032) & (US\$/Ton)

Figure 42. World Phosphorus-doped Hard Carbon Production Value by Doping Method, (USD Million), 2021 & 2025 & 2032

Figure 43. World Phosphorus-doped Hard Carbon Production Value Market Share by Doping Method in 2025

Figure 44. In-situ Doping

Figure 45. Post-treatment Doping

Figure 46. World Phosphorus-doped Hard Carbon Production Market Share by Doping Method (2021-2032)

Figure 47. World Phosphorus-doped Hard Carbon Production Value Market Share by

Doping Method (2021-2032)

Figure 48. World Phosphorus-doped Hard Carbon Average Price by Doping Method (2021-2032) & (US\$/Ton)

Figure 49. World Phosphorus-doped Hard Carbon Production Value by Application, (USD Million), 2021 & 2025 & 2032

Figure 50. World Phosphorus-doped Hard Carbon Production Value Market Share by Application in 2025

Figure 51. Energy Storage

Figure 52. Grid Infrastructure

Figure 53. Electric Vehicle

Figure 54. Consumer Electronic

Figure 55. Industrial

Figure 56. Others

Figure 57. World Phosphorus-doped Hard Carbon Production Market Share by Application (2021-2032)

Figure 58. World Phosphorus-doped Hard Carbon Production Value Market Share by Application (2021-2032)

Figure 59. World Phosphorus-doped Hard Carbon Average Price by Application (2021-2032) & (US\$/Ton)

Figure 60. Phosphorus-doped Hard Carbon Industry Chain

Figure 61. Phosphorus-doped Hard Carbon Procurement Model

Figure 62. Phosphorus-doped Hard Carbon Sales Model

Figure 63. Phosphorus-doped Hard Carbon Sales Channels, Direct Sales, and Distribution

Figure 64. Methodology

Figure 65. Research Process and Data Source

I would like to order

Product name: Global Phosphorus-doped Hard Carbon Supply, Demand and Key Producers, 2026-2032

Product link: <https://marketpublishers.com/r/G51993878252EN.html>

Price: US\$ 4,480.00 (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/G51993878252EN.html>