

Advanced Lead Acid Battery Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Stationary, Motive), By Construction Method (Flooded, VRLA, Others), By End User (Automotive & Transportation, Energy & Power, Industrial, Commercial), By Region & Competition, 2019-2029F

<https://marketpublishers.com/r/A5842F59CE83EN.html>

Date: July 2024

Pages: 189

Price: US\$ 4,900.00 (Single User License)

ID: A5842F59CE83EN

Abstracts

Global Advanced Lead Acid Battery Market was valued at USD 20.67 billion in 2023 and is anticipated to project robust growth in the forecast period with a CAGR of 9.22% through 2029.

The Advanced Lead Acid Battery market encompasses the development, production, and distribution of enhanced lead acid batteries that offer superior performance compared to traditional lead acid batteries. These batteries incorporate advanced technologies such as enhanced materials, improved design, and innovative manufacturing processes to deliver better energy density, longer life cycles, faster recharge times, and increased reliability. They are widely used in various applications, including automotive, industrial, renewable energy storage, and uninterruptible power supplies (UPS).

Advanced lead acid batteries are designed to address the limitations of conventional lead acid batteries, such as limited cycle life and poor charge acceptance. Innovations in this market include the use of advanced grid structures, enhanced active materials, and improved electrolyte compositions, which collectively enhance the overall efficiency and durability of the batteries. Additionally, these batteries often feature maintenance-free designs, reducing the need for regular upkeep.

The market for advanced lead acid batteries is driven by the growing demand for energy storage solutions that are both cost-effective and environmentally friendly. With the increasing adoption of renewable energy systems and the rising need for reliable backup power, the advanced lead acid battery market is expected to experience significant growth in the coming years.

Key Market Drivers

Increasing Demand for Renewable Energy Storage

The global shift towards renewable energy sources, such as solar and wind power, has significantly increased the demand for efficient and reliable energy storage solutions. Advanced lead acid batteries play a crucial role in this transition by providing cost-effective and durable energy storage options. Unlike traditional energy sources, renewables generate power intermittently, necessitating robust storage systems to ensure a stable and continuous power supply. Advanced lead acid batteries, with their improved cycle life and efficiency, are well-suited to store excess energy generated during peak production times and release it during periods of low generation or high demand.

Advancements in battery technology have led to the development of lead acid batteries with higher energy density and faster recharge rates, making them more competitive with other types of batteries such as lithium-ion. These improvements are particularly important for off-grid renewable energy systems and microgrids in remote areas where reliable energy storage is critical. The scalability and cost-effectiveness of advanced lead acid batteries make them an attractive option for large-scale renewable energy projects, contributing to the market's growth.

Rising Automotive Industry Adoption

The automotive industry is a major driver of the advanced lead acid battery market. Lead acid batteries have long been the preferred choice for automotive applications due to their reliability, affordability, and ability to deliver high surge currents, essential for engine starting. However, the advent of start-stop systems in modern vehicles has increased the demand for batteries that can endure frequent cycling and partial state-of-charge operations. Advanced lead acid batteries, such as absorbent glass mat (AGM) and enhanced flooded batteries (EFB), are specifically designed to meet these requirements.

Start-stop systems automatically shut off the engine when the vehicle is idling and restart it when the driver releases the brake pedal, thereby reducing fuel consumption and emissions. These systems place a significant strain on the battery, necessitating the use of advanced lead acid batteries that offer superior cycling performance and charge acceptance. The growing emphasis on fuel efficiency and emission reduction in the automotive sector is driving the adoption of these advanced batteries. Furthermore, the increasing electrification of vehicles, including the rise of hybrid and electric vehicles, is expected to further boost the demand for advanced lead acid batteries for auxiliary power and energy storage applications.

Industrial Applications and Backup Power Solutions

Industrial applications, including manufacturing, telecommunications, and data centers, rely heavily on uninterrupted power supplies (UPS) to ensure continuous operation and protect sensitive equipment from power fluctuations. Advanced lead acid batteries are a popular choice for UPS systems due to their reliability, low maintenance requirements, and cost-effectiveness. These batteries provide a stable and dependable power source, crucial for industries where even a brief power outage can result in significant operational and financial losses.

To UPS systems, advanced lead acid batteries are widely used in industrial machinery, forklifts, and other heavy equipment, where they offer robust performance and durability. The ability to withstand harsh operating conditions and deliver consistent power output makes them ideal for such demanding applications. The expansion of industrial infrastructure and the growing need for reliable backup power solutions in emerging economies are driving the demand for advanced lead acid batteries in the industrial sector.

Key Market Challenges

Competition from Alternative Battery Technologies

One of the significant challenges facing the global advanced lead acid battery market is the intense competition from alternative battery technologies, particularly lithium-ion batteries. Lithium-ion batteries have gained substantial traction across various applications due to their higher energy density, lighter weight, and longer cycle life compared to lead acid batteries. These advantages make lithium-ion batteries more attractive for use in electric vehicles (EVs), portable electronics, and renewable energy

storage systems.

The growing adoption of lithium-ion batteries in the automotive industry, especially with the rise of EVs, presents a formidable challenge to the advanced lead acid battery market. Many automotive manufacturers are shifting towards lithium-ion batteries for their new models due to their superior performance characteristics. This shift is driven by the need for longer driving ranges, faster charging times, and overall better efficiency, which lithium-ion technology can provide. As a result, the market share for advanced lead acid batteries in the automotive sector is under significant pressure.

The declining cost of lithium-ion batteries due to economies of scale and advancements in production technology further exacerbates the challenge. As lithium-ion batteries become more affordable, they are increasingly being adopted in applications traditionally dominated by lead acid batteries, such as uninterruptible power supplies (UPS) and industrial equipment. The perception of lithium-ion batteries as a more modern and high-performance solution also influences consumer preferences and market trends, posing a substantial hurdle for the growth of the advanced lead acid battery market.

Environmental and Regulatory Concerns

Environmental and regulatory concerns present another significant challenge for the advanced lead acid battery market. Lead, a primary component of lead acid batteries, is a toxic heavy metal that poses serious environmental and health risks. Improper disposal and recycling of lead acid batteries can lead to soil and water contamination, adversely affecting ecosystems and human health. The recycling process itself, if not properly managed, can release harmful emissions and expose workers to hazardous conditions.

As a result, stringent environmental regulations governing the use, disposal, and recycling of lead acid batteries are in place in many regions. Compliance with these regulations often involves substantial costs for manufacturers, including investments in safe recycling practices and environmentally friendly production processes. These additional costs can impact the overall competitiveness and profitability of advanced lead acid battery manufacturers, especially when compared to alternative battery technologies that do not face similar regulatory burdens.

There is growing public and governmental pressure to reduce the use of hazardous materials and promote greener alternatives. This pressure can lead to increased

regulatory scrutiny and potentially stricter future regulations, further complicating the operating environment for lead acid battery manufacturers. The need to balance performance and environmental sustainability presents a complex challenge for the advanced lead acid battery market.

To address these environmental concerns, the industry must continue to innovate in areas such as lead recycling efficiency, reducing lead content, and developing safer battery chemistries. However, these efforts require significant research and development investments, which may not yield immediate returns. The challenge of aligning with stringent environmental standards while maintaining economic viability is a critical issue that the advanced lead acid battery market must navigate to ensure sustainable growth..

Key Market Trends

Advancements in Battery Technology

Technological advancements continue to drive the evolution of the advanced lead acid battery market. Innovations in materials, design, and manufacturing processes are leading to significant improvements in battery performance, durability, and efficiency. One of the notable trends is the development of enhanced grid alloys and advanced active materials that increase the battery's energy density and cycle life.

For example, the use of carbon additives in the negative plates of lead acid batteries has been shown to improve charge acceptance and reduce sulfation, a common cause of battery failure. This results in batteries that can charge faster and deliver more consistent performance over their lifespan. Additionally, advancements in separator technology are reducing internal resistance and enhancing overall battery efficiency.

Another technological trend is the integration of smart battery management systems (BMS) that monitor and optimize battery performance in real-time. These systems help prevent overcharging, over-discharging, and overheating, thereby extending the battery's operational life and improving safety. The incorporation of Internet of Things (IoT) capabilities in BMS allows for remote monitoring and predictive maintenance, further enhancing the reliability and cost-effectiveness of advanced lead acid batteries.

Increasing Focus on Sustainability and Recycling

The advanced lead acid battery market is witnessing a growing emphasis on

sustainability and recycling practices. As environmental concerns and regulatory pressures intensify, manufacturers are investing in eco-friendly production methods and efficient recycling processes to minimize the environmental impact of lead acid batteries. This trend is driven by both regulatory requirements and consumer demand for greener products.

One significant development in this area is the improvement in battery recycling technologies. Advanced lead acid batteries are highly recyclable, with over 95% of their components, including lead, plastic, and acid, being recoverable. Innovations in recycling processes are enhancing the efficiency and safety of lead recovery, reducing emissions, and minimizing waste. These advancements are making lead acid batteries one of the most recycled products globally, contributing to a circular economy.

Manufacturers are exploring ways to reduce the lead content in batteries and replace it with less hazardous materials. Research is ongoing to develop new battery chemistries that offer similar performance with reduced environmental impact. This focus on sustainability is not only helping companies comply with regulations but also improving their brand image and attracting environmentally conscious customers.

Segmental Insights

Type Insights

The Stationary segment held the largest Market share in 2023. The stationary segment dominated the global advanced lead acid battery market due to several key factors. Primarily, the demand for reliable and cost-effective energy storage solutions in various stationary applications drove this dominance. Stationary advanced lead acid batteries were extensively used in uninterruptible power supplies (UPS) systems, which were critical for ensuring continuous power in data centers, hospitals, and telecommunications infrastructure. These batteries provided the necessary backup power during outages, thereby safeguarding sensitive equipment and maintaining operational continuity.

The integration of renewable energy systems significantly contributed to the stationary segment's dominance. As solar and wind energy adoption increased globally, the need for efficient energy storage solutions that could store excess energy generated during peak production periods and supply it during low production times became paramount. Advanced lead acid batteries, with their enhanced cycle life and deep discharge capabilities, were well-suited for such applications, making them a preferred choice for

renewable energy storage.

The robustness and reliability of advanced lead acid batteries in stationary applications played a crucial role. These batteries were capable of withstanding harsh environmental conditions and providing consistent performance over extended periods, making them ideal for use in remote and off-grid installations. Their ability to deliver high power output and maintain stable voltage levels under varying load conditions made them indispensable for critical infrastructure and industrial applications.

The cost-effectiveness of advanced lead acid batteries also bolstered their dominance in the stationary segment. Compared to alternative battery technologies, such as lithium-ion, advanced lead acid batteries offered a more affordable solution for large-scale energy storage needs. Their established manufacturing processes and widespread availability further enhanced their appeal in the market.

Regional Insights

Asia-Pacific region held the largest market share in 2023. The Asia-Pacific region, particularly countries like China and India, has experienced rapid industrialization and urbanization. This growth has led to increased demand for reliable energy storage solutions across various sectors, including manufacturing, telecommunications, and transportation. Advanced lead acid batteries, known for their robustness and cost-effectiveness, are well-suited to meet these demands, particularly in applications such as backup power systems and industrial machinery.

Many Asia-Pacific countries are investing heavily in renewable energy sources to address energy security and environmental concerns. The integration of advanced lead acid batteries into renewable energy systems, such as solar and wind power, is essential for storing excess energy and ensuring a stable power supply. The region's commitment to expanding its renewable energy infrastructure drives the demand for advanced lead acid batteries, which offer a reliable and cost-effective solution for energy storage.

The automotive industry in Asia-Pacific is experiencing significant growth, with a rising focus on fuel efficiency and reduced emissions. Advanced lead acid batteries, particularly those designed for start-stop systems and hybrid vehicles, are increasingly adopted to meet these requirements. The region's large automotive manufacturing base and increasing vehicle ownership contribute to the strong demand for advanced lead acid batteries.

The Asia-Pacific region benefits from established manufacturing capabilities and cost advantages. Many leading advanced lead acid battery manufacturers are based in this region, leveraging lower production costs and economies of scale to offer competitive pricing. This has positioned Asia-Pacific as a key hub for both production and consumption of advanced lead acid batteries, further solidifying its market dominance.

Key Market Players

Johnson Controls International plc

Enersys

East Penn Manufacturing Co.

Trojan Battery Company LLC

FIAMM Energy Technology S.p.A.

GS Yuasa Corporation

Clarios LLC

HOPPECKE Batterien GmbH & Co. KG

Hengyang Ritar Power Co., Ltd.

Power-Sonic Corporation

Report Scope:

In this report, the Global Advanced Lead Acid Battery Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Advanced Lead Acid Battery Market, By Type:

Stationary

Motive

Advanced Lead Acid Battery Market, By Construction Method:

Flooded

VRLA

Others

Advanced Lead Acid Battery Market, By End User:

Automotive & Transportation

Energy & Power

Industrial

Commercial

Advanced Lead Acid Battery Market, By Region:

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia-Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Kuwait

Turkey

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Advanced Lead Acid Battery Market.

Available Customizations:

Global Advanced Lead Acid Battery Market report with the given Market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional Market players (up to five).

Contents

1. PRODUCT OVERVIEW

- 1.1. Market Definition
- 1.2. Scope of the Market
 - 1.2.1. Markets Covered
 - 1.2.2. Years Considered for Study
- 1.3. Key Market Segmentations

2. RESEARCH METHODOLOGY

- 2.1. Objective of the Study
- 2.2. Baseline Methodology
- 2.3. Formulation of the Scope
- 2.4. Assumptions and Limitations
- 2.5. Sources of Research
 - 2.5.1. Secondary Research
 - 2.5.2. Primary Research
- 2.6. Approach for the Market Study
 - 2.6.1. The Bottom-Up Approach
 - 2.6.2. The Top-Down Approach
- 2.7. Methodology Followed for Calculation of Market Size & Market Shares
- 2.8. Forecasting Methodology
 - 2.8.1. Data Triangulation & Validation

3. EXECUTIVE SUMMARY

4. VOICE OF CUSTOMER

5. GLOBAL ADVANCED LEAD ACID BATTERY MARKET OUTLOOK

- 5.1. Market Size & Forecast
 - 5.1.1. By Value
- 5.2. Market Share & Forecast
 - 5.2.1. By Type (Stationary, Motive)
 - 5.2.2. By Construction Method (Flooded, VRLA, Others)
 - 5.2.3. By End User (Automotive & Transportation, Energy & Power, Industrial, Commercial)

5.2.4. By Region (Asia Pacific, North America, South America, Middle East & Africa, Europe)

5.2.5. By Company (2023)

5.3. Market Map

6. NORTH AMERICA ADVANCED LEAD ACID BATTERY MARKET OUTLOOK

6.1. Market Size & Forecast

6.1.1. By Value

6.2. Market Share & Forecast

6.2.1. By Type

6.2.2. By Construction Method

6.2.3. By End User

6.2.4. By Country

6.3. North America: Country Analysis

6.3.1. United States Advanced Lead Acid Battery Market Outlook

6.3.1.1. Market Size & Forecast

6.3.1.1.1. By Value

6.3.1.2. Market Share & Forecast

6.3.1.2.1. By Type

6.3.1.2.2. By Construction Method

6.3.1.2.3. By End User

6.3.2. Canada Advanced Lead Acid Battery Market Outlook

6.3.2.1. Market Size & Forecast

6.3.2.1.1. By Value

6.3.2.2. Market Share & Forecast

6.3.2.2.1. By Type

6.3.2.2.2. By Construction Method

6.3.2.2.3. By End User

6.3.3. Mexico Advanced Lead Acid Battery Market Outlook

6.3.3.1. Market Size & Forecast

6.3.3.1.1. By Value

6.3.3.2. Market Share & Forecast

6.3.3.2.1. By Type

6.3.3.2.2. By Construction Method

6.3.3.2.3. By End User

7. EUROPE ADVANCED LEAD ACID BATTERY MARKET OUTLOOK

- 7.1. Market Size & Forecast
 - 7.1.1. By Value
- 7.2. Market Share & Forecast
 - 7.2.1. By Type
 - 7.2.2. By Construction Method
 - 7.2.3. By End User
 - 7.2.4. By Country
- 7.3. Europe: Country Analysis
 - 7.3.1. Germany Advanced Lead Acid Battery Market Outlook
 - 7.3.1.1. Market Size & Forecast
 - 7.3.1.1.1. By Value
 - 7.3.1.2. Market Share & Forecast
 - 7.3.1.2.1. By Type
 - 7.3.1.2.2. By Construction Method
 - 7.3.1.2.3. By End User
 - 7.3.2. United Kingdom Advanced Lead Acid Battery Market Outlook
 - 7.3.2.1. Market Size & Forecast
 - 7.3.2.1.1. By Value
 - 7.3.2.2. Market Share & Forecast
 - 7.3.2.2.1. By Type
 - 7.3.2.2.2. By Construction Method
 - 7.3.2.2.3. By End User
 - 7.3.3. Italy Advanced Lead Acid Battery Market Outlook
 - 7.3.3.1. Market Size & Forecast
 - 7.3.3.1.1. By Value
 - 7.3.3.2. Market Share & Forecast
 - 7.3.3.2.1. By Type
 - 7.3.3.2.2. By Construction Method
 - 7.3.3.2.3. By End User
 - 7.3.4. France Advanced Lead Acid Battery Market Outlook
 - 7.3.4.1. Market Size & Forecast
 - 7.3.4.1.1. By Value
 - 7.3.4.2. Market Share & Forecast
 - 7.3.4.2.1. By Type
 - 7.3.4.2.2. By Construction Method
 - 7.3.4.2.3. By End User
 - 7.3.5. Spain Advanced Lead Acid Battery Market Outlook
 - 7.3.5.1. Market Size & Forecast
 - 7.3.5.1.1. By Value

7.3.5.2. Market Share & Forecast

7.3.5.2.1. By Type

7.3.5.2.2. By Construction Method

7.3.5.2.3. By End User

8. ASIA-PACIFIC ADVANCED LEAD ACID BATTERY MARKET OUTLOOK

8.1. Market Size & Forecast

8.1.1. By Value

8.2. Market Share & Forecast

8.2.1. By Type

8.2.2. By Construction Method

8.2.3. By End User

8.2.4. By Country

8.3. Asia-Pacific: Country Analysis

8.3.1. China Advanced Lead Acid Battery Market Outlook

8.3.1.1. Market Size & Forecast

8.3.1.1.1. By Value

8.3.1.2. Market Share & Forecast

8.3.1.2.1. By Type

8.3.1.2.2. By Construction Method

8.3.1.2.3. By End User

8.3.2. India Advanced Lead Acid Battery Market Outlook

8.3.2.1. Market Size & Forecast

8.3.2.1.1. By Value

8.3.2.2. Market Share & Forecast

8.3.2.2.1. By Type

8.3.2.2.2. By Construction Method

8.3.2.2.3. By End User

8.3.3. Japan Advanced Lead Acid Battery Market Outlook

8.3.3.1. Market Size & Forecast

8.3.3.1.1. By Value

8.3.3.2. Market Share & Forecast

8.3.3.2.1. By Type

8.3.3.2.2. By Construction Method

8.3.3.2.3. By End User

8.3.4. South Korea Advanced Lead Acid Battery Market Outlook

8.3.4.1. Market Size & Forecast

8.3.4.1.1. By Value

- 8.3.4.2. Market Share & Forecast
 - 8.3.4.2.1. By Type
 - 8.3.4.2.2. By Construction Method
 - 8.3.4.2.3. By End User
- 8.3.5. Australia Advanced Lead Acid Battery Market Outlook
 - 8.3.5.1. Market Size & Forecast
 - 8.3.5.1.1. By Value
 - 8.3.5.2. Market Share & Forecast
 - 8.3.5.2.1. By Type
 - 8.3.5.2.2. By Construction Method
 - 8.3.5.2.3. By End User

9. SOUTH AMERICA ADVANCED LEAD ACID BATTERY MARKET OUTLOOK

- 9.1. Market Size & Forecast
 - 9.1.1. By Value
- 9.2. Market Share & Forecast
 - 9.2.1. By Type
 - 9.2.2. By Construction Method
 - 9.2.3. By End User
 - 9.2.4. By Country
- 9.3. South America: Country Analysis
 - 9.3.1. Brazil Advanced Lead Acid Battery Market Outlook
 - 9.3.1.1. Market Size & Forecast
 - 9.3.1.1.1. By Value
 - 9.3.1.2. Market Share & Forecast
 - 9.3.1.2.1. By Type
 - 9.3.1.2.2. By Construction Method
 - 9.3.1.2.3. By End User
 - 9.3.2. Argentina Advanced Lead Acid Battery Market Outlook
 - 9.3.2.1. Market Size & Forecast
 - 9.3.2.1.1. By Value
 - 9.3.2.2. Market Share & Forecast
 - 9.3.2.2.1. By Type
 - 9.3.2.2.2. By Construction Method
 - 9.3.2.2.3. By End User
 - 9.3.3. Colombia Advanced Lead Acid Battery Market Outlook
 - 9.3.3.1. Market Size & Forecast
 - 9.3.3.1.1. By Value

9.3.3.2. Market Share & Forecast

9.3.3.2.1. By Type

9.3.3.2.2. By Construction Method

9.3.3.2.3. By End User

10. MIDDLE EAST AND AFRICA ADVANCED LEAD ACID BATTERY MARKET OUTLOOK

10.1. Market Size & Forecast

10.1.1. By Value

10.2. Market Share & Forecast

10.2.1. By Type

10.2.2. By Construction Method

10.2.3. By End User

10.2.4. By Country

10.3. Middle East and Africa: Country Analysis

10.3.1. South Africa Advanced Lead Acid Battery Market Outlook

10.3.1.1. Market Size & Forecast

10.3.1.1.1. By Value

10.3.1.2. Market Share & Forecast

10.3.1.2.1. By Type

10.3.1.2.2. By Construction Method

10.3.1.2.3. By End User

10.3.2. Saudi Arabia Advanced Lead Acid Battery Market Outlook

10.3.2.1. Market Size & Forecast

10.3.2.1.1. By Value

10.3.2.2. Market Share & Forecast

10.3.2.2.1. By Type

10.3.2.2.2. By Construction Method

10.3.2.2.3. By End User

10.3.3. UAE Advanced Lead Acid Battery Market Outlook

10.3.3.1. Market Size & Forecast

10.3.3.1.1. By Value

10.3.3.2. Market Share & Forecast

10.3.3.2.1. By Type

10.3.3.2.2. By Construction Method

10.3.3.2.3. By End User

10.3.4. Kuwait Advanced Lead Acid Battery Market Outlook

10.3.4.1. Market Size & Forecast

- 10.3.4.1.1. By Value
- 10.3.4.2. Market Share & Forecast
 - 10.3.4.2.1. By Type
 - 10.3.4.2.2. By Construction Method
 - 10.3.4.2.3. By End User
- 10.3.5. Turkey Advanced Lead Acid Battery Market Outlook
 - 10.3.5.1. Market Size & Forecast
 - 10.3.5.1.1. By Value
 - 10.3.5.2. Market Share & Forecast
 - 10.3.5.2.1. By Type
 - 10.3.5.2.2. By Construction Method
 - 10.3.5.2.3. By End User

11. MARKET DYNAMICS

- 11.1. Drivers
- 11.2. Challenges

12. MARKET TRENDS & DEVELOPMENTS

13. COMPANY PROFILES

- 13.1. Johnson Controls International plc
 - 13.1.1. Business Overview
 - 13.1.2. Key Revenue and Financials
 - 13.1.3. Recent Developments
 - 13.1.4. Key Personnel/Key Contact Person
 - 13.1.5. Key Product/Services Offered
- 13.2. EnerSys
 - 13.2.1. Business Overview
 - 13.2.2. Key Revenue and Financials
 - 13.2.3. Recent Developments
 - 13.2.4. Key Personnel/Key Contact Person
 - 13.2.5. Key Product/Services Offered
- 13.3. East Penn Manufacturing Co.
 - 13.3.1. Business Overview
 - 13.3.2. Key Revenue and Financials
 - 13.3.3. Recent Developments
 - 13.3.4. Key Personnel/Key Contact Person

- 13.3.5. Key Product/Services Offered
- 13.4. Trojan Battery Company LLC
 - 13.4.1. Business Overview
 - 13.4.2. Key Revenue and Financials
 - 13.4.3. Recent Developments
 - 13.4.4. Key Personnel/Key Contact Person
 - 13.4.5. Key Product/Services Offered
- 13.5. FIAMM Energy Technology S.p.A.
 - 13.5.1. Business Overview
 - 13.5.2. Key Revenue and Financials
 - 13.5.3. Recent Developments
 - 13.5.4. Key Personnel/Key Contact Person
 - 13.5.5. Key Product/Services Offered
- 13.6. GS Yuasa Corporation
 - 13.6.1. Business Overview
 - 13.6.2. Key Revenue and Financials
 - 13.6.3. Recent Developments
 - 13.6.4. Key Personnel/Key Contact Person
 - 13.6.5. Key Product/Services Offered
- 13.7. Clarios LLC
 - 13.7.1. Business Overview
 - 13.7.2. Key Revenue and Financials
 - 13.7.3. Recent Developments
 - 13.7.4. Key Personnel/Key Contact Person
 - 13.7.5. Key Product/Services Offered
- 13.8. HOPPECKE Batterien GmbH & Co. KG
 - 13.8.1. Business Overview
 - 13.8.2. Key Revenue and Financials
 - 13.8.3. Recent Developments
 - 13.8.4. Key Personnel/Key Contact Person
 - 13.8.5. Key Product/Services Offered
- 13.9. Hengyang Ritar Power Co., Ltd.
 - 13.9.1. Business Overview
 - 13.9.2. Key Revenue and Financials
 - 13.9.3. Recent Developments
 - 13.9.4. Key Personnel/Key Contact Person
 - 13.9.5. Key Product/Services Offered
- 13.10. Power-Sonic Corporation
 - 13.10.1. Business Overview

- 13.10.2. Key Revenue and Financials
- 13.10.3. Recent Developments
- 13.10.4. Key Personnel/Key Contact Person
- 13.10.5. Key Product/Services Offered

14. STRATEGIC RECOMMENDATIONS

15 ABOUT US & DISCLAIMER

I would like to order

Product name: Advanced Lead Acid Battery Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Stationary, Motive), By Construction Method (Flooded, VRLA, Others), By End User (Automotive & Transportation, Energy & Power, Industrial, Commercial), By Region & Competition, 2019-2029F

Product link: <https://marketpublishers.com/r/A5842F59CE83EN.html>

Price: US\$ 4,900.00 (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/A5842F59CE83EN.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