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Global Lithium Battery Aluminum Alloy Shell Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global Lithium Battery Aluminum Alloy Shell market size is expected to reach $ 7091 million by 2032, rising at a market growth of 6.5% CAGR during the forecast period (2026-2032).

Aluminum alloy casings for lithium batteries are metal structural components used for the external packaging of prismatic, cylindrical, or certain specialized lithium-ion battery cells. Their primary functions include providing mechanical protection, hermetic sealing, heat dissipation, insulation support, resistance to expansion, and safety protection. Typically fabricated from 3-series, 5-series, or 6-series aluminum alloys, these casings are manufactured through processes such as extrusion, deep drawing, stamping, welding, precision shaping, cleaning, anodizing, spraying, or film coating. They are widely utilized in power batteries, energy storage batteries, consumer electronics batteries, and light-duty power batteries. In 2025, the global sales volume of aluminum alloy lithium battery casings is projected to reach approximately 7.26 billion units, with an average unit price of approximately $0.62. The capacity utilization rate is expected to be around 76.9%, and the industry's average gross margin is estimated at approximately 21.8%. Upstream enterprises primarily consist of suppliers of aluminum ingots, sheets and strips, coils, profiles, alloy additives, surface treatment materials, insulation films, sealing components, welding materials, molds, stamping equipment, deep-drawing equipment, and automated inspection systems. The midstream sector comprises manufacturers of aluminum battery casings, battery structural components, precision stamping firms, deep-drawn casing specialists, surface treatment providers, and suppliers of battery cover assemblies. The downstream sector includes manufacturers of power batteries, energy storage batteries, and consumer electronics batteries; suppliers of batteries for light electric vehicles; battery pack assembly plants; new energy vehicle OEMs; and energy storage system integrators. Regarding the

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product cost structure, aluminum materials account for approximately 42.6%; stamping, deep drawing, extrusion, and welding processes account for about 18.4%; mold depreciation and tooling/fixtures account for roughly 6.7%; surface treatments—including anodizing, spraying, film coating, and cleaning—account for approximately 9.8%; insulation components, seals, and auxiliary materials account for about 5.6%; automated inspection, dimensional sorting, and yield loss account for roughly 6.9%; manufacturing labor, energy consumption, and equipment maintenance account for about 5.4%; packaging, logistics, and after-sales warranty support account for approximately 2.8%; and R&D verification and customer certification amortization account for about 1.8%. The downstream demand portfolio encompasses prismatic power cell casings, cylindrical cell metal casings, energy storage cell enclosures, large-capacity cell housings, thermal management structures for fast-charging cells, lightweight power battery casings, consumer electronics cell housings, and cell safety protection components. The downstream client roster includes CATL, BYD, CALB, EVE Energy, Gotion High-tech, SVOLT, Sunwoda, REPT BATTERO, Envision AESC, LG Energy Solution, Samsung SDI, Panasonic Energy, SK On, Northvolt, Tesla, Toyota, Volkswagen, BMW, Stellantis, and major energy storage system integrators. In terms of demand and business opportunities, policy-driven growth stems from the promotion of new energy vehicles, grid-connection policies for energy storage systems, power battery safety standards, green manufacturing initiatives, low-carbon transportation, and the localization of the battery industry supply chain. Technological innovation serves as another key driver, driven by advancements in large-capacity prismatic cells, large cylindrical batteries, fast-charging batteries, high-strength thin-walled aluminum casings, laser welding, surface insulation coatings, in-line airtightness testing, and automated forming processes. Furthermore, shifts in consumer demand—manifested in end-users' heightened requirements for driving range, fast-charging capabilities, safety, lightweight design, cost-effectiveness, longevity, and consistent quality—have concentrated business opportunities for lithium-ion battery aluminum alloy casings in specific areas: the expansion of power battery production capacity, the scaling up of energy storage cell output, the mass production of large cylindrical and large-capacity prismatic cells, the substitution of existing materials with thin-walled high-strength casings, the development of localized supply chain support, the upgrading of automated inspection systems, and the integrated supply of battery structural components.

From the perspective of industrial location, the aluminum alloy shell of lithium batteries has gradually evolved from ordinary metal stamping parts to an important constraint on the safety and manufacturing yield of battery cell structures. In 2025, downstream power batteries and energy storage batteries will continue to expand production, maintaining a high demand for aluminum shells. However, customer procurement logic

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will become more rational, no longer simply pursuing low prices, but paying more attention to shell thickness consistency, corner forming quality, welding window stability, airtightness test pass rate, and long-term supply capacity. For battery factories, once micro cracks, dimensional deviations, surface contamination, or insulation defects occur in aluminum shells, they may affect subsequent liquid injection, sealing, laser welding, and cell safety. Therefore, top customers are more inclined to choose suppliers with automated production lines, online testing, and batch quality traceability capabilities. The future demand increment mainly comes from the construction of large capacity square energy storage cells, fast charging power cells, and localized overseas battery factories. At the same time, the large cylindrical route will also drive the demand for high-precision aluminum shells and related shell cover structural components. Industry pressure comes from fluctuations in aluminum prices, annual price reductions by customers, phased overcapacity, and homogenization of low-end products. It is difficult to achieve high profits solely by expanding production. Enterprises with collaborative capabilities in material control, mold development, thin-walled forming, surface treatment, and cover plate components will be more likely to upgrade from ordinary shell suppliers to comprehensive suppliers of battery structural components. Overall, this product will not simply follow the growth of battery production in the future, but will continue to differentiate around safety, lightweight, low-cost, automated testing, and global delivery capabilities.

This report studies the global Lithium Battery Aluminum Alloy Shell production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Lithium Battery Aluminum Alloy Shell 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 Lithium Battery Aluminum Alloy Shell that contribute to its increasing demand across many markets.

Highlights and key features of the study
Global Lithium Battery Aluminum Alloy Shell total production and demand, 2021-2032, (M Units)
Global Lithium Battery Aluminum Alloy Shell total production value, 2021-2032, (USD Million)
Global Lithium Battery Aluminum Alloy Shell production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (M Units), (based on production site)
Global Lithium Battery Aluminum Alloy Shell consumption by region & country, CAGR, 2021-2032 & (M Units)

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U.S. VS China: Lithium Battery Aluminum Alloy Shell domestic production, consumption, key domestic manufacturers and share
Global Lithium Battery Aluminum Alloy Shell production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (M Units)
Global Lithium Battery Aluminum Alloy Shell production by Type, production, value, CAGR, 2021-2032, (USD Million) & (M Units)
Global Lithium Battery Aluminum Alloy Shell production by Application, production, value, CAGR, 2021-2032, (USD Million) & (M Units)

This report profiles key players in the global Lithium Battery Aluminum Alloy Shell 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 SANGSIN EDP (KR), FUJI SPRINGS (US), UACJ Corporation (JP), Fischer Group (DE), Speira (DE), Lingyun Industrial Corporation (CN), Ningbo Xusheng Group (CN), Guangdong Hongtu Technology (CN), Jiangsu Asia-Pacific Light Alloy Technology (CN), Huada Automotive Technology (CN), 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 Lithium Battery Aluminum Alloy Shell market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (M Units) and average price (US$/Unit) 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 Lithium Battery Aluminum Alloy Shell Market, By Region:

United States

China

Europe

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Japan

South Korea

ASEAN

India

Rest of World

Global Lithium Battery Aluminum Alloy Shell Market, Segmentation by Type:

Winding Process

Laminated Process

Other

Global Lithium Battery Aluminum Alloy Shell Market, Segmentation by Shell Wall Thickness:

?0.8 mm

0.8–1.5 mm

> 1.5 mm

Global Lithium Battery Aluminum Alloy Shell Market, Segmentation by Surface Treatment:

Anodized Type

Sprayed or Film Coated Type

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Global Lithium Battery Aluminum Alloy Shell Market, Segmentation by Application:

Power Battery

Energy Storage Battery

Consumer Battery

Companies Profiled:

SANGSIN EDP (KR)

FUJI SPRINGS (US)

UACJ Corporation (JP)

Fischer Group (DE)

Speira (DE)

Lingyun Industrial Corporation (CN)

Ningbo Xusheng Group (CN)

Guangdong Hongtu Technology (CN)

Jiangsu Asia-Pacific Light Alloy Technology (CN)

Huada Automotive Technology (CN)

Ningbo Tuopu Group (CN)

Jiangsu Alcha Aluminium Group (CN)

Suzhou Sumzone (CN)

Shenzhen Mottcell New Energy Technology (CN)

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Key Questions Answered:

1. How big is the global Lithium Battery Aluminum Alloy Shell market?
2. What is the demand of the global Lithium Battery Aluminum Alloy Shell market?
3. What is the year over year growth of the global Lithium Battery Aluminum Alloy Shell market?
4. What is the production and production value of the global Lithium Battery Aluminum Alloy Shell market?
5. Who are the key producers in the global Lithium Battery Aluminum Alloy Shell market?
6. What are the growth factors driving the market demand?

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