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Automotive Lead-Acid Battery Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Vehicle Type (Passenger Cars, Commercial Vehicles, Two-Wheelers, HEV Cars), By Product (SLI Batteries, Micro Hybrid Batteries), By Type (Flooded Batteries, Enhanced Flooded Batteries, VRLA Batteries), By Region & Competition, 2021-2031F

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Abstracts

The global automotive lead-acid battery market is projected to expand from USD 15.03 billion in 2025 to USD 19.14 billion by 2031, achieving a compound annual growth rate (CAGR) of 4.11%. These rechargeable electrochemical devices, comprising lead plates and a sulfuric acid electrolyte, are primarily designed to deliver high surge currents for Starting, Lighting, and Ignition (SLI) systems in vehicles. The market's fundamental drivers include the sustained global production of internal combustion engine vehicles and the critical requirement for 12-volt auxiliary power in electric and hybrid models, ensuring their continued relevance despite powertrain electrification. According to the International Lead and Zinc Study Group, global demand for refined lead metal was forecast to increase by nearly 2% in 2025, largely attributed to steady consumption in the battery sector. However, significant challenges could impede market expansion, such as the implementation of increasingly stringent environmental regulations concerning lead emissions and recycling, which impose substantial compliance costs on manufacturers. Additionally, the industry faces intensifying competition from lithium-ion alternatives that offer superior energy density, potentially limiting the long-term application of lead-acid technology in evolving vehicle architectures.

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Market Driver

The automotive lead-acid battery market is significantly propelled by the high recyclability of lead-acid chemistry and its established closed-loop infrastructure, which provides a sustainable economic advantage over competing technologies. Unlike lithium-ion alternatives, which face complex recovery challenges, lead-acid batteries operate within a mature circular economy where materials are indefinitely recoverable, mitigating raw material volatility. Battery Council International reported in November 2024 that lead batteries have maintained a recycling rate of 99%, preventing over 160 million batteries from entering landfills annually, securing their position as the preferred choice for mass-market applications where cost and environmental compliance are paramount. Additionally, sustained demand from the automotive replacement battery aftermarket serves as a critical engine for growth, heavily influenced by the aging global vehicle fleet. As vehicles remain in service longer, the frequency of battery replacement cycles increases, stabilizing revenue streams for manufacturers beyond initial OEM contracts. The European Automobile Manufacturers' Association (ACEA) stated in September 2024 that the average age of the EU passenger car fleet has risen to 12.3 years. Furthermore, the continuous expansion of the primary install base ensures future aftermarket needs; for example, the China Association of Automobile Manufacturers reported in January 2025 that China produced approximately 31.28 million vehicles in 2024, guaranteeing a long-term dependency on lead-acid units for starting, lighting, and ignition functions.

Market Challenge

Intensifying competition from lithium-ion alternatives significantly hampers the growth of the global automotive lead-acid battery market by limiting its long-term application in evolving vehicle architectures. Lithium-ion technology offers superior energy density, reduced weight, and longer cycle life compared to traditional lead-acid chemistries. As the automotive industry increasingly prioritizes efficiency and range in modern vehicle designs, automakers are shifting toward lithium-based solutions not only for powertrain electrification but also for auxiliary systems. This technical displacement marginalizes lead-acid batteries, restricting their addressable market primarily to cost-sensitive, legacy applications and preventing them from capturing high-value growth in the expanding electric vehicle segment. This trend is evidenced by the rapid adoption of electric powertrains, which rely heavily on lithium chemistries. According to the European Automobile Manufacturers' Association, in 2025, battery-electric vehicles accounted for approximately 16.9% of the total new car market share in the European Union. This structural transition toward platforms optimized for lithium-ion technology

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creates a substantial barrier for lead-acid battery manufacturers, and by reducing the industry's dependence on lead-acid units for essential functions, this competitive pressure directly constrains the market's expansion potential in the face of advancing automotive technology.

Market Trends

The development of Enhanced Flooded Batteries (EFB) is gaining momentum as a cost-effective solution for micro-hybrid and start-stop vehicles. EFBs utilize improved plate designs and carbon additives to manage the high cycling loads required by frequent engine restarts, offering a viable alternative to more expensive Absorbent Glass Mat (AGM) architectures. Automakers are increasingly favoring this technology to meet stringent fuel economy standards without incurring the premium component costs associated with AGM solutions. According to Stryten Energy, in November 2025, the market for Original Equipment Enhanced Flooded Batteries is forecast to double by 2030, reflecting this structural shift in vehicle power specifications. Simultaneously, the deployment of lead-acid batteries as auxiliary low-voltage power sources in electric vehicles (EVs) is expanding. While lithium-ion chemistries dominate the high-voltage powertrain, 12-volt lead-acid batteries remain essential for powering critical safety systems, lighting, and onboard electronics, acting as a redundant fail-safe to the main battery. This functional requirement ensures that lead-acid technology retains a vital role in the electrification transition, supporting volume growth despite the decline of internal combustion engines. Battery Council International reported in September 2025 that automotive lead battery demand grew 3.9% year-over-year in 2024, underscored by their enduring utility in modern vehicle platforms.

Key Market Players

C&D Technologies Inc.

CSB Energy Technology Co. Ltd

East Penn Manufacturing Company

Exide Industries Ltd.

GS Yuasa Corporation

Koyo Battery Co., Ltd.

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Leoch International Technology Ltd

PT. Century Batteries Indonesia

Robert Bosch GmbH

Thai Bellco Battery Co. Ltd.

Report Scope

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

Automotive Lead-Acid Battery Market, By Vehicle Type

Passenger Cars

Commercial Vehicles

Two-Wheelers

HEV Cars

Automotive Lead-Acid Battery Market, By Product

SLI Batteries

Micro Hybrid Batteries

Automotive Lead-Acid Battery Market, By Type

Flooded Batteries

Enhanced Flooded Batteries

VRLA Batteries

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Automotive 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

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Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

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

Available Customizations:

Global Automotive Lead-Acid Battery Market report with the given market data, TechSci 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).

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