

High-Temperature Battery Market Size, Share & Trends Analysis Report By Product

The Business Research Company's High-Temperature Battery Global Market Report 2025 – Market Size, Trends, And Forecast 2025-2034

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In the last several years, the market size of high-temperature batteries has been on a robust growth trajectory. From \$4.57 billion in 2024, it is projected to expand to \$5.03 billion in 2025 at a compound annual growth rate (CAGR) of 9.9%. This significant growth during the historic period

can be linked to a few key drivers, including increased battery use in aerospace and defense applications, escalated implementation of grid stabilization projects in distant areas, greater use of these batteries in geothermal energy systems, a growing tendency to replace traditional power systems in harsh conditions, and a rising demand for high-efficiency batteries in mining activities.

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In the forthcoming years, the market size of high-temperature batteries is anticipated to witness significant growth, reaching \$7.25 billion by 2029, with a compound

annual growth rate (CAGR) of 9.6%. This predicted growth during the forecasted timeframe can be ascribed to the rising demand for robust batteries in smart grid infrastructures, the increased use of batteries for storing concentrated solar power, the heightened adoption of batteries in autonomous underwater vehicles, and the rising usage of batteries for extended energy backup systems. Moreover, the growing demand for robust batteries in industrial robotics also contributes to this expansion. The major trends to look out for during this period include the integration with grid-scale energy storage, application in remote and off-grid environments, usage in high-power medical devices, growth in oilfield and underground monitoring, and utilization in next-gen electric aviation.

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What Are The Current Leading Growth [Drivers For High-Temperature Battery Market?](#)

The growth of the high-temperature battery market is anticipated to be spurred by an uptick in deployments within the oil and gas sectors. The term "oil and gas" is referring to the extraction of natural resources from the Earth, which mainly include crude oil and natural gas that are typically used as fuel as well as raw materials for energy production and creation of petrochemical products. The escalating worldwide energy needs are driving companies toward expanding their exploration and production initiatives within the oil and gas sectors, warranting a consistent supply and promoting energy security along with economic growth. High-temperature batteries hold a pivotal place within the oil and gas industry by offering robust and dependable energy solutions for equipment and processes that operate in harsh settings. This helps in maintaining continuous performance, minimizing downtime, and boosting comprehensive operational efficiency. For instance, data from the Energy Information Administration, an agency of the US government, in December 2024 shows that in 2023, there were increased levels of production for both oil and natural gas (gross withdrawals) in the U.S., with the daily average oil production standing at 13.3 million barrels and daily natural gas production peaking at 128.8 billion cubic feet in December 2023. As such, the rise in deployments within the oil and gas sectors is fueling the expansion of the high-temperature battery market.

Which Companies Are Currently Leading In The High-Temperature Battery Market?

Major players in the High-Temperature Battery Global Market Report 2025 include:

- Sumitomo Electric Industries Ltd.
- EVE Energy Co. Ltd.
- Diehl Stiftung & Co. KG
- Saft Groupe SAS
- EaglePicher Technologies
- HBL Power Systems Limited
- Ultralife Corporation
- BRENTRONICS Inc.
- Tadiran Batteries Ltd.
- Engineered Power Inc.

What Are The Prominent Trends In The High-Temperature Battery Market?

Leading corporations in the high-temperature battery industry are prioritizing the development of state-of-the-art products such as batteries that utilize AGM technology, in order to satisfy the escalating need for trustworthy energy storage solutions. High-temp batteries that utilize AGM technology are sealed lead-acid batteries featuring Absorbent Glass Mat separators that securely hold the electrolyte, ensuring secure, leakage-free operation and are crafted to deliver steady performance and lengthened lifespan, even under harsh temperatures. As an example, Exide Technologies, LLC, a firm based in the U.S. that specializes in battery production and energy

storage solutions, introduced the Sprinter Pure Power battery range in November 2023, primarily for data center UPS and other high-demand stationary applications. These batteries leverage advanced pure lead AGM technology for enhanced reliability, durability, and power density, promising a design life span over 12 years, a 20% increase in power at high-rate discharge, and a lower total cost of ownership due to improved charge efficiency and space saving in comparison to conventional AGM batteries.

How Is The High-Temperature Battery Market Segmented?

The high-temperature battery market covered in this report is segmented as

- 1) By Type: Sodium-Sulfur Batteries, Sodium-Metal Halide Batteries, Lithium-Ion Batteries, Other Types
- 2) By Form Factor: Prismatic Batteries, Cylindrical Batteries, Pouch Cells, Custom-Shaped Batteries, Packaged Solutions
- 3) By Battery Range: 120°C–150°C, Above 150°C, 80°C–120°C
- 4) By Application: Energy Storage Systems, Electric Vehicles (EVs), Industrial Applications, Aerospace And Defense, Consumer Electronics
- 5) By End-User Industry: Renewable Energy, Transportation, Telecommunications, Manufacturing And Heavy Industry, Utilities And Energy Providers

Subsegments:

- 1) By Sodium-Sulfur Batteries: High-Temperature Cylindrical Sodium-Sulfur Batteries, High-Temperature Prismatic Sodium-Sulfur Batteries
- 2) By Sodium-Metal Halide Batteries: Sodium-Nickel Chloride Batteries, Sodium-Zinc Chloride Batteries
- 3) By Lithium-Ion Batteries: High-Temperature Lithium-Ion Batteries, Lithium Iron Phosphate Batteries (LFP), Nickel Manganese Cobalt Batteries (NMC)
- 4) By Other Types: Flow Batteries, Solid-State High-Temperature Batteries

View the full high-temperature battery market report:

<https://www.thebusinessresearchcompany.com/report/high-temperature-battery-global-market-report>

Which Is The Dominating Region For The High-Temperature Battery Market?

In the High-Temperature Battery Global Market Report 2025, Asia-Pacific led the high-temperature battery market in 2024 and is projected to continue its growth. The report covers the following regions: Asia-Pacific, Western Europe, Eastern Europe, North America, South America, Middle East, and Africa.

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