+357 96 030922
info@marketpublishers.com

Thermal Batteries for Military Market By Voltage (10 V to 50 V, 51 V to 100 V, Above 101 V), By Application (Missiles, Artillery, Space Crafts and Rockets): Global Opportunity Analysis and Industry Forecast, 2024-2033

https://marketpublishers.com/r/T916F719C5F9EN.html
Date: December 2024
Pages: 350
Price: US$ 2,601.00 (Single User License)
ID: T916F719C5F9EN

Abstracts

The global thermal batteries for military market was valued at $149.1 million in 2023, and is projected to reach $274.2 million by 2033, growing at a CAGR of 6.4% from 2024 to 2033.

A thermal battery is a type of energy storage device that stores energy in the form of heat. Thermal batteries, also known as thermoelectric or molten salt batteries, are critical components in various military applications due to their unique characteristics and reliable performance under extreme conditions. These batteries operate by using a solid-state electrolyte that becomes conductive when heated to high temperatures, typically achieved through an internal pyrotechnic charge.

As military technologies advance and become more sophisticated, the demand for thermal batteries is expected to grow during the forecast period. Their compact size, high energy density, and resilience make them indispensable for powering various military devices such as guided missiles, artillery systems, unmanned aerial vehicles (UAVs), and portable communication equipment. All these factors are expected to drive the growth of the thermal batteries for military market during the forecast period.

However, thermal batteries are highly specialized devices designed to provide instant power in critical situations, however, they operate by relying on high-temperature electrochemical reactions initiated by melting the electrolyte. In extremely cold environments, this activation process becomes delayed or requires more energy,

+357 96 030922
info@marketpublishers.com

potentially compromising the rapid response capabilities essential for many military operations. Moreover, excessive heat has led to thermal degradation, affecting the battery's longevity and stability, which reduces its overall reliability during extended missions in harsh climates. This vulnerability poses challenges to their use in diverse global military settings, particularly in regions with extreme temperature fluctuations. All these factors hamper the thermal batteries for military market growth.

Advancements in thermal battery technology for military applications offer significant opportunities to address existing limitations and expand their utility across a broader range of defense operations. Innovations focused on enhancing the performance of thermal batteries under extreme conditions, such as improved thermal insulation and faster activation times, have enabled greater reliability and efficiency in harsh environments. Cutting-edge materials and engineering techniques are explored to optimize electrolyte compositions, extend operational life, and minimize energy losses during activation. These technological strides ensure that thermal batteries remain resilient and responsive, even in extreme temperatures, bolstering their appeal for mission-critical uses where performance cannot be compromised. All these factors are anticipated to offer new growth opportunities for the thermal batteries for military market during the forecast period.

The thermal batteries for military market is segmented into voltage, application, and region. On the basis of voltage, the market is classified into 10 V to 50 V, 51 V to 100 V, and above 101 V. By application, the market is divided into artillery, missiles, space crafts, and rockets. Region-wise the market is analyzed across North America, Europe, Asia-Pacific, and LAMEA.

On the basis of voltage, the market is classified into 10 V To 50 V, 51 V To 100 V, and above 101 V. The 10 V To 50 V segment accounted for less than half of global thermal batteries for military market share in 2023 and is expected to maintain its dominance during the forecast period. The development of advanced materials and manufacturing techniques is enabling the production of more efficient thermal batteries. These innovations allow for higher energy densities, faster recharge times, and greater stability, all of which align with the military's push for enhanced operational capabilities. Thermal batteries in this voltage range are becoming increasingly preferable due to their extended shelf life, reduced maintenance requirements, and the ability to perform reliably in diverse operational conditions, including in chemical, biological, radiological, and nuclear (CBRN) environments.

By application, the market is divided into artillery, missiles, space crafts and rockets.

+357 96 030922
info@marketpublishers.com

The missiles region accounted for more than three-fifths of global thermal batteries for military market share in 2023 and is expected to maintain its dominance during the forecast period. The extended shelf life and low maintenance requirements of thermal batteries make them ideal for use in missiles. Military missiles are stored for long periods before being deployed, and thermal batteries remain in a dormant state for years without losing their charge or degrading in performance. This long shelf life reduces the need for frequent maintenance or recharging, ensuring that missiles are ready for deployment at any given moment. This is particularly important for strategic missile systems that are not used regularly but must be maintained at optimal readiness.

Region-wise, the market is analyzed across North America, Europe, Asia-Pacific, and LAMEA. The North America region accounted for more than two-fifths of global thermal batteries for military market share in 2023 and is expected to maintain its dominance during the forecast period. The growing focus on energy efficiency and sustainability within European defense policies plays a role in driving the adoption of thermal batteries. As part of broader initiatives to reduce carbon footprints and improve the environmental sustainability of defense systems, European military forces are seeking energy solutions that offer high efficiency with minimal environmental impact. Thermal batteries, with their long shelf life, low maintenance requirements, and energy-dense properties, align well with these goals. They allow for the storage and use of energy in a manner that does not contribute significantly to emission that makes them a key component in Europe’s push toward more sustainable military operations.

Key players in the thermal batteries for military market include EaglePicher Technologies, Diehl Stiftung & Co. KG, ASB GROUP, ENERSYS, HBL Germany GmbH, Epsilor-Electric Fuel Ltd., Bren-Tronics, Inc., RAFAEL Advanced Defense Systems Ltd., and T?B?TAK Defense Industries Research and Development Institute.

Key findings of the study

By voltage, the 51 V to 100 V segment is anticipated to grow at the fastest CAGR during the forecast period.

On the basis of application, the missiles segment is anticipated to grow at the fastest CAGR of 6.5% during the forecast period.

+357 96 030922
info@marketpublishers.com

Region-wise, North America has the highest share in 2023 in terms of revenue.

Key Benefits for Stakeholders

This report provides a quantitative analysis of the market segments, current trends, estimations, and dynamics of the thermal batteries for military market analysis from 2023 to 2033 to identify the prevailing thermal batteries for military market opportunities.

The market research is offered along with information related to key drivers, restraints, and opportunities.

Porter's five forces analysis highlights the potency of buyers and suppliers to enable stakeholders make profit-oriented business decisions and strengthen their supplier-buyer network.

In-depth analysis of the thermal batteries for military market segmentation assists to determine the prevailing market opportunities.

Major countries in each region are mapped according to their revenue contribution to the global market.

Market player positioning facilitates benchmarking and provides a clear understanding of the present position of the market players.

The report includes the analysis of the regional as well as global thermal batteries for military market trends, key players, market segments, application areas, and market growth strategies.

Additional benefits you will get with this purchase are:

Quarterly Update and* (only available with a corporate license, on listed price)

+357 96 030922
info@marketpublishers.com

5 additional Company Profile of client Choice pre- or Post-purchase, as a free update.

Free Upcoming Version on the Purchase of Five and Enterprise User License.

16 analyst hours of support* (post-purchase, if you find additional data requirements upon review of the report, you may receive support amounting to 16 analyst hours to solve questions, and post-sale queries)

15% Free Customization* (in case the scope or segment of the report does not match your requirements, 15% is equivalent to 3 working days of free work, applicable once)

Free data Pack on the Five and Enterprise User License. (Excel version of the report)

Free Updated report if the report is 6-12 months old or older.

24-hour priority response*

Free Industry updates and white papers.

Possible Customization with this report (with additional cost and timeline, please talk to the sales executive to know more)

Analysis of raw material in a product (by %)

Investment Opportunities

Product Benchmarking / Product specification and applications

Supply Chain Analysis & Vendor Margins

Upcoming/New Entrant by Regions

Technology Trend Analysis

+357 96 030922
info@marketpublishers.com

New Product Development/ Product Matrix of Key Players

Regulatory Guidelines

Additional company profiles with specific to client's interest

Additional country or region analysis- market size and forecast

Criss-cross segment analysis- market size and forecast

Expanded list for Company Profiles

Historic market data

Import Export Analysis/Data

Key player details (including location, contact details, supplier/vendor network etc. in excel format)

List of customers/consumers/raw material suppliers- value chain analysis

Market share analysis of players at global/region/country level

SWOT Analysis

Key Market Segments

By Voltage

10 V to 50 V

51 V to 100 V

Above 101 V

By Application

+357 96 030922
info@marketpublishers.com

Missiles

Artillery

Space Crafts and Rockets

By Region

North America

U.S.

Canada

Mexico

Europe

Germany

France

UK

Spain

Italy

Rest of Europe

Asia-Pacific

China

India

Japan

+357 96 030922
info@marketpublishers.com

South Korea

Australia

Rest of Asia-Pacific

LAMEA

Brazil

South Africa

Saudi Arabia

Rest of LAMEA

Key Market Players

ASB GROUP

Bren-Tronics, Inc.

Diehl Stiftung & Co. KG

EaglePicher Technologies, LLC

EnerSys

Epsilor-Electric Fuel Ltd.

HBL Germany GmbH

RAFAEL Advanced Defense Systems Ltd.

T?B?TAK Defense Industries Research and Development Institute

VITZRO CELL

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

CHAPTER 5: THERMAL BATTERIES FOR MILITARY MARKET, BY APPLICATION

CHAPTER 6: THERMAL BATTERIES FOR MILITARY MARKET, BY REGION

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

CHAPTER 7: COMPETITIVE LANDSCAPE

+357 96 030922
info@marketpublishers.com

CHAPTER 8: COMPANY PROFILES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Thermal Batteries for Military Market By Voltage (10 V to 50 V, 51 V to 100 V, Above 101 V), By Application (Missiles, Artillery, Space Crafts and Rockets): Global Opportunity Analysis and Industry Forecast, 2024-2033

Product link: https://marketpublishers.com/r/T916F719C5F9EN.html

Price: US$ 2,601.00 (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/T916F719C5F9EN.html