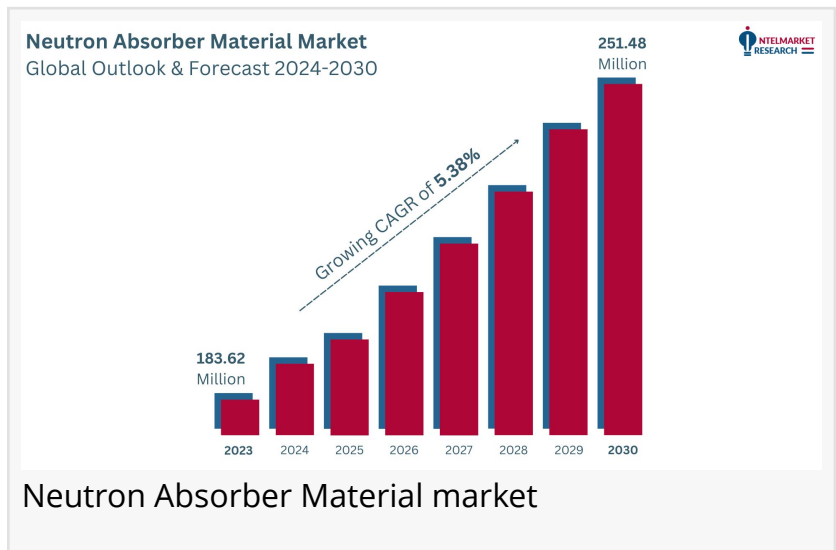


Neutron Absorber Material Market, Global Outlook and Forecast 2025-2032

Neutron Absorber Material market size in terms of revenue is projected to reach 251.48 Million USD by 2029 from 183.62 Million USD in 2023

PUNE, MAHARASHTRA, INDIA, January 2, 2025 /EINPresswire.com/ -- Neutron absorber materials are substances that effectively absorb neutrons without causing a nuclear chain reaction. These materials are used in various applications in the nuclear industry, such as nuclear reactor control, radiation shielding, and nuclear waste management.



□ Steady Market Growth: The global [Neutron Absorber Material market](#) is anticipated to experience steady growth, with revenue projected to increase from 183.62 Million USD in 2023 to 251.48 Million USD by 2029, representing a Compound Annual Growth Rate (CAGR) of 5.38% during the forecast period.



Global Neutron Absorber Material market size in terms of revenue is projected to reach 251.48 Million USD by 2029 from 183.62 Million USD in 2023, with a CAGR 5.38% during 2023-2029."

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□ Critical Role in Nuclear Applications: Neutron absorber materials play a crucial role in various nuclear applications, including nuclear power generation, nuclear waste management, and nuclear research, by absorbing excess neutrons to control nuclear reactions and ensure safety and stability within nuclear facilities.

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□ Nuclear Energy Expansion: The expansion of nuclear energy projects worldwide, driven by the need for clean and sustainable energy sources to mitigate climate change and reduce dependence on fossil fuels, is expected to drive the demand for neutron absorber materials

used in reactor control systems and safety mechanisms.

□ Safety and Regulatory Compliance: Stringent safety regulations and standards governing nuclear facilities and operations, along with increasing emphasis on risk mitigation and accident prevention, are likely to fuel the adoption of neutron absorber materials designed to enhance the safety and reliability of nuclear reactors and related infrastructure.

□ Growing Nuclear Reactor Fleet: The aging nuclear reactor fleet in many countries, coupled with the construction of new nuclear power plants and the decommissioning of older facilities, presents opportunities for market growth as operators seek to upgrade and modernize reactor systems with advanced neutron absorber materials to extend operational life and enhance performance.

□ Research and Development Initiatives: Ongoing research and development initiatives aimed at improving the performance, efficiency, and cost-effectiveness of neutron absorber materials through material engineering, process optimization, and technological innovation are expected to drive product advancements and market expansion.

□ Diverse Applications Beyond Energy: Neutron absorber materials find applications beyond nuclear energy, including radiation shielding, aerospace and defense, medical imaging and therapy, industrial radiography, and neutron scattering experiments, expanding the market scope and potential growth opportunities across various industries.

□ Regional Market Dynamics: Regional variations in nuclear energy policies, investment priorities, infrastructure development, and technological capabilities will influence the demand for neutron absorber materials, with emerging markets in Asia-Pacific, particularly China and India, expected to drive significant market growth.

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Regional Insights:

□ North America:

The North American Neutron Absorber Material market is anticipated to witness substantial growth, ascending from 55.58 million USD in 2023 to a projected 69.16 million USD by 2029. This marks a noteworthy CAGR of 3.71% during the forecast period.

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□ Europe:

□ In Europe, the Neutron Absorber Material market is forecasted to surge from 58.56 million USD in 2023 to an estimated 80.86 million USD by 2029. The expected CAGR for this period is 5.53%, underlining a trajectory of robust expansion.

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□ Asia-Pacific:

□ The Asia-Pacific region is poised for significant growth in the Neutron Absorber Material market, with projections indicating an increase from 61.38 million USD in 2023 to a substantial 90.75 million USD by 2029. This anticipates a compelling CAGR of 6.73% during the forecast period.

□ The Asia-Pacific region is poised for significant growth in the Neutron Absorber Material market, with projections indicating an increase from 61.38 million USD in 2023 to a substantial 90.75 million USD by 2029. This anticipates a compelling CAGR of 6.73% during the forecast period.

Vendor Landscape:

□ As of 2022, the top five vendors collectively commanded an impressive 73.89% share of the Neutron Absorber Material market revenue, emphasizing the dominance and influence of these major players.

Report Scope

This report aims to provide a comprehensive presentation of the global market for Neutron Absorber Material, with both quantitative and qualitative analysis, to help readers develop business/growth strategies, assess the market competitive situation, analyze their position in the current marketplace, and make informed business decisions regarding Neutron Absorber Material.

The Neutron Absorber Material market size, estimations, and forecasts are provided in terms of output/shipments (Tons) and revenue (\$ millions), considering 2022 as the base year, with history and forecast data for the period from 2018 to 2029. This report segments the global Neutron Absorber Material market comprehensively. Regional market sizes, concerning products by Type, by Application, and by players, are also provided.

For a more in-depth understanding of the market, the report provides profiles of the competitive landscape, key competitors, and their respective market ranks. The report also discusses technological trends and new product developments.

The report will help the Neutron Absorber Material manufacturers, new entrants, and industry chain related companies in this market with information on the revenues, production, and average price for the overall market and the sub-segments across the different segments, by company, by Type, by Application, and by regions.

By Company:

- 3M
- Holtec International
- Nikkeikin Aluminium Core Technology Company
- Rochling
- Nippon Yakin Kogyo
- Antai-heyuan Nuclear Energy Technology & Materials
- MillenniTEK
- Ramon Science and Technology
- Lemer Pax
- Hangzhou Taofeilun
- Stanford Advanced Materials (Oceania International)
- Jiangsu Hailong Nuclear Technology
- Trumony Aluminum

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Segment By Type:

- Boron-Stainless Steel
- Boron Carbide
- Boron Carbide-Aluminum Composite
- Others

Segment By Application:

- Spent Fuel Storage Racks
- Storage and Transportation Casks
- Others

Production & Consumption By Region:

- North America (United States, Canada, Mexico)
- Europe (Germany, France, United Kingdom, Italy, Spain, Rest of Europe)
- Asia-Pacific (China, India, Japan, South Korea, Australia, Rest of APAC)
- The Middle East and Africa (Middle East, Africa)
- South and Central America (Brazil, Argentina, Rest of SCA)

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Key Trends in the Neutron Absorber Material Market:

□ Increasing demand from nuclear power industry: With the growing emphasis on nuclear power generation as a sustainable and reliable energy source, there is a rising demand for neutron absorber materials. These materials are essential for controlling and managing neutron flux in nuclear reactors, ensuring safe and efficient operations.

□ Development of advanced neutron absorber materials: Researchers and material scientists are continuously working on developing new and advanced neutron absorber materials with improved performance characteristics. These materials aim to offer higher neutron absorption cross-sections, better thermal and radiation stability, and longer service life.

□ Focus on accident-tolerant fuels (ATFs): In the aftermath of the Fukushima Daiichi nuclear accident, there has been a heightened focus on developing accident-tolerant fuels (ATFs) for nuclear reactors. Neutron absorber materials play a crucial role in the design and implementation of ATFs, as they contribute to enhancing the safety and resilience of nuclear fuel systems under accident conditions.

□ Adoption of advanced manufacturing techniques: The production of neutron absorber materials often involves complex manufacturing processes. The industry is witnessing the adoption of advanced manufacturing techniques, such as additive manufacturing (3D printing) and powder metallurgy, to improve the quality, consistency, and cost-effectiveness of these materials.

□ Emphasis on long-term performance and reliability: Nuclear reactors have a long operational lifespan, and neutron absorber materials need to maintain their performance and integrity over extended periods. Manufacturers and researchers are focusing on improving the long-term performance and reliability of these materials to ensure safe and reliable reactor operations.

□ Recycling and waste management: As nuclear power plants age and undergo decommissioning, there is a growing need for effective recycling and waste management strategies for neutron absorber materials. Efforts are being made to develop recycling techniques and sustainable disposal methods to minimize environmental impact.

□ Regulatory compliance and safety standards: The nuclear industry operates under stringent regulatory frameworks and safety standards. Neutron absorber materials must comply with these regulations and standards to ensure the safe and secure handling, transportation, and usage of these materials.

□ Collaboration and knowledge-sharing: The development and application of neutron absorber materials often involve collaboration between research institutions, material science companies, and nuclear industry stakeholders. Knowledge-sharing and collaborative efforts are essential for driving innovation and addressing challenges in this specialized field.

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