

North America Boron Market Report (2021-2031) by Scope, Segmentation, Dynamics, and Competitive Analysis

<https://marketpublishers.com/r/ND10E37740A8EN.html>

Date: September 2025

Pages: 154

Price: US\$ 3,450.00 (Single User License)

ID: ND10E37740A8EN

Abstracts

The North American boron market is projected to grow from US\$ 929.85 million in 2023 to US\$ 1,196.20 million by 2031, reflecting a compound annual growth rate (CAGR) of 3.2% during this period.

Executive Summary and Market Analysis

North America presents significant growth potential for boron manufacturers, driven by rising demand from various end-use sectors, including agrochemicals, glass, ceramics, detergents, electrical and electronics, and pharmaceuticals. The region's strong manufacturing base, bolstered by technological advancements, plays a crucial role in the increasing demand for boron. Notably, major global glass manufacturers such as Saint-Gobain, Guardian Industries, and PPG Industries are prominent in North America. The expansion of the glass industry correlates with a heightened need for boron, which is essential for glass production due to its durability and resistance to thermal and chemical stress.

The demand for boron is also influenced by the growing solar energy sector, where boron is a key component in solar panels. Legislative measures, such as California's building code mandating solar panel installations in new homes, and New York City's Climate Mobilization Act, which requires solar PV panels on major roof renovations, are driving the demand for solar glass in the region.

Additionally, advancements in the electronics and pharmaceutical industries are further propelling boron adoption. Major electronics firms, including Apple, IBM, and Intel, are based in North America, and small to medium-sized companies represent a significant

portion of the electronics manufacturing landscape. The Semiconductor Industry Association reported that semiconductor sales in the U.S. reached US\$ 75 billion in 2022, highlighting the critical role of boron in producing radar and communication systems.

Market Segmentation

The North American boron market is segmented by derivatives and end-use industries. In terms of derivatives, the market includes borax, boric acid, boron nitride, boron carbide, boron oxide, and others, with boron nitride holding the largest market share in 2023. Regarding end-use industries, the market is divided into agrochemicals, glass, ceramics, detergents, pharmaceuticals, electrical and electronics, and others, with glass being the leading segment in 2023.

Market Outlook

The development of boron nanoparticles is gaining momentum due to their unique properties and potential applications across various sectors. These nanoparticles exhibit high durability, thermal stability, and chemical inertness, making them valuable in the aerospace industry for enhancing composite materials. Recent research indicates that hexagonal boron nitride could potentially replace diamond in quantum sensing applications.

Boron nanoparticles are also being explored for targeted drug delivery systems, particularly in cancer treatment. A study published in April 2024 highlighted a boron-containing agent designed for targeted delivery to liver cancer cells, utilizing Boron Neutron Capture Therapy. Furthermore, boron nitride quantum dots, known for their biocompatibility and unique properties, are in early research stages, with potential applications in sensing, photocatalysis, and bioimaging.

Country Insights

The North American boron market comprises the U.S., Canada, and Mexico, with the U.S. holding the largest market share in 2023. The U.S. boron market is expanding rapidly, driven by growth in the glass, pharmaceutical, agriculture, and electronics sectors. The glass manufacturing industry is a significant contributor to the U.S. economy, supplying products to various sectors, including semiconductors and solar equipment. In 2022, the workforce in the glass manufacturing sector was approximately 135,690.

The demand for boron in electronics is also on the rise, as boron-infused components enhance the performance and longevity of electronic devices. The Semiconductor Industry Association noted that U.S. semiconductor companies invested US\$ 50.2 billion in research and development in 2021, further driving the need for boron in the industry.

Company Profiles

Key players in the boron market include Hoganas AB, 3M Co, Ube Corporation, Arkema SA, JFE Mineral & Alloy Co Ltd, and others. These companies are pursuing strategies such as expansion, product innovation, and mergers and acquisitions to enhance their market presence and offer innovative solutions to consumers.

Reason to buy

Save and reduce time carrying out entry-level research by identifying the growth, size, leading players, and segments in the North America boron market.

Highlights key business priorities in order to assist companies to realign their business strategies.

The key findings and recommendations highlight crucial progressive industry trends in North America boron market, thereby allowing players across the value chain to develop effective long-term strategies.

Develop/modify business expansion plans by using substantial growth offering developed and emerging markets.

Scrutinize in-depth North America market trends and outlook coupled with the factors driving the boron market, as well as those hindering it.

Enhance the decision-making process by understanding the strategies that underpin security interest with respect to client products, segmentation, pricing, and distribution.

Companies

Hoganas AB

3M Co

Ube Corporation

Arkema SA

JFE Mineral & Alloy Co Ltd

Tokyo Chemical Industry Co Ltd

Rio Tinto Ltd

Compagnie de Saint Gobain SA

Eti Maden

Nippon Denko Co., Ltd.

Stella Chemifa Corporation

FREEMAN (JAPAN) CO., LTD.

KROSAKI HARIMA CORPORATION

Washington Mills Electro Minerals Limited

Boron Specialties, LLC

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