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Metallic Glasses Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

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Abstracts

The Global Metallic Glasses Market was valued at USD 1.8 billion in 2024 and is estimated to grow at a CAGR of 6.5% to reach USD 3.3 billion by 2034, driven by the unique properties of metallic glasses, which combine high tensile strength with excellent corrosion resistance and malleability. These materials' amorphous atomic structure allows them to perform exceptionally well under challenging conditions, making them ideal for structural strength and precision. They are useful in industries requiring durability and resistance to wear, such as electrical and magnetic components. As industries continue to demand more advanced and efficient materials, the versatile applications of metallic glasses are gaining traction.

The market benefits from increased demand in the electromagnetic and electronics sectors. Metallic glasses' low power dissipation and high efficiency make them suitable for magnetic cores, sensors, and transformers. Moreover, advancements in manufacturing technologies, such as rapid solidification and physical vapor deposition, are reducing production costs and enabling scalable operations. The biomedical sector is another key growth area for metallic glasses, as their biocompatibility and mechanical strength make them ideal for medical implants and surgical tools. Their resistance to bacteria and wear adds to their appeal for healthcare applications.

In 2024, the metal-metalloid segment of the metallic glasses market was valued at USD 1.1 billion and is projected to grow at a CAGR of 5.7% through 2034 fueled by the rising demand for lightweight and cost-effective materials, particularly in industries such as consumer electronics, augmented reality/virtual reality (AR/VR), and medical devices. These materials offer the perfect balance of strength and flexibility, making them ideal for the miniaturized components in these fast-evolving sectors. As technological advancements push for smaller, more efficient products, the adoption of metal-metalloid

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glasses is expected to accelerate across various applications.

The ribbons segment, valued at USD 700 million in 2024, is also projected to experience a growth rate of 5.1% through 2034, attributed to their exceptional magnetic properties, which make them particularly suitable for use in transformers and magnetic sensors. As the demand for advanced electronic systems, energy-efficient equipment, and more precise sensor technologies increases, ribbons made from metallic glasses will continue to play a crucial role in these applications. Their ability to perform under demanding conditions while maintaining high performance makes them an asset for industries focusing on power generation, energy distribution, and high-tech sensing technologies.

U.S. Metallic Glasses Market was valued at USD 530 million in 2024, with a projected growth rate of 6% CAGR from 2025 to 2034, driven by the growing demand for metallic glasses in aerospace, defense systems, and electronics. Close collaboration between manufacturers and defense contractors is expediting the development and distribution of new metallic glass solutions. Additionally, research institutions in the U.S. are playing a vital role in advancing new alloys and optimizing production processes, which further supports the market’s expansion.

Key companies in the Global Metallic Glasses Market include Heraeus Holding GmbH, Liquidmetal Technologies Inc., Materion Corporation, Usha Amorphous Metals Limited, and Hitachi Metals Ltd. To strengthen their presence, companies in the metallic glasses market focus on expanding production capabilities and refining manufacturing processes to reduce costs. Strategic partnerships and collaborations with research institutions and other industry players are helping accelerate innovation and the introduction of new materials. Manufacturers invest in technological advancements, such as additive manufacturing and advanced alloy development, to meet the growing demand for high-performance materials across various industries.

Companies Mentioned

Amorphology Inc. , Antai Technology Co., Ltd. , EPSON ATMIX Corporation , Exmet AB , Glassimetal Technology , Heraeus Holding , Hitachi Metals Ltd. , Liquidmetal Technologies Inc. , Materion Corporation , PrometalTech , PX Group SA , Qingdao Yunlu Advanced Materials Technology Co., Ltd. , RS Alloys , Usha Amorphous Metals Limited

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