China Lab Grown Diamond Market Assessment, By Manufacturing Method [HPHT, CVD], By Nature [Colorless, Colored], By Size [Below 2 Carat, 2-4 Carat, Above 4 Carat], By Application [Industrial, Fashion], By Region, Opportunities and Forecast, 2018-2032F

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Report description:

China lab grown diamond market is projected to witness a CAGR of 14.70% during the forecast period 2025-2032, growing from USD 7.49 billion in 2024 to USD 22.45 billion in 2032. The market has experienced significant growth in recent years and is expected to maintain a strong pace of expansion in the coming years.

China lab grown market is experiencing growth due to its advanced manufacturing capabilities. The rise of technological innovations is fueling the demand for lab grown diamonds. Furthermore, cost-efficiencies of lab grown diamonds is sustaining a tendency for continual market expansion.

The country's expertise in high-pressure, high-temperature techniques is further complemented by the increasing adoption of chemical vapor deposition technologies. These advancements enable the production of high-quality synthetic diamonds at competitive prices, which cater to industrial and jewelry applications.

Moreover, the industrial segment is also fueling demand for lab grown diamonds market in China. As these diamonds are used in various applications ranging from cutting tools to electronic devices. However, the rise of sustainable and ethical consumer preferences has opened new avenues in the gemstone market. Chinese manufacturers are scaling their operations to meet the growing global demand for lab grown diamonds.

Furthermore, the country's robust infrastructure, coupled with government incentives, has further accelerated growth. Key diamond-producing hubs like Zhengzhou in Henan Province serve as innovative centers that support research and development in superhard materials. Additionally, China benefits from an emerging middle-class population that increasingly values affordable luxury items, including lab grown diamond jewelry, which further propels the market growth.

For instance, in November 2024, Austrian jewelry brand Swarovski entered the lab grown diamond sector in China after receiving

a positive response. This development indicates growing consumer acceptance and confidence in lab-grown diamonds within the Chinese market.

Cost Effective Manufacturing is Propelling Market Expansion

China's lab grown diamond market has risen to global prominence, largely fueled by its cost-effective manufacturing capabilities. The country's dominance in the industry stems from its ability to produce high-quality synthetic diamonds at significantly lower costs compared to global competition. The advantage of manufacturing at a lower cost is driven by a combination of technological expertise, large-scale production facilities, and a favorable economic environment.

Chinese manufacturers such as Zhongnan Diamond and Henan Whirlwind benefit from economies of scale, which allow them to achieve unparalleled production volume. The adoption of the high-pressure high temperature method coupled with innovations in chemical vapor deposition technology has further streamlined the production processes. This efficiency enables Chinese manufacturer to produce lab grown diamonds at costs which is 20% to 40% lower than in Western nations.

Moreover, low labor costs and government incentives such as tax benefits and funding for research and development reduce operational expenses. These savings are passed on to consumers, making lab grown diamonds a more accessible and affordable alternative to natural diamonds, which boosts the demand for the lab grown diamond market.

The cost advantage not only boosts the domestic demand, particularly among China's emerging middle class, but also positions the country as a key exporter to international markets. The major buyers in the United States and Europe value the affordability of Chinese lab grown diamonds, especially in industries like electronics and luxury jewelry, which diversifies the market's revenue streams and assures consistent demand, considerably contributing to its growth.

For instance, in June 2024, SF Diamond established a lab grown diamond factory in Henan province that has an annual production capacity of about 7,00,000 carats, which makes it the largest chemical vapor deposition (CVD) process-based diamond producer in the country. This facility focuses on producing diamonds for industrial applications, which further emphasizes the cost-effectiveness of lab grown diamonds in sectors such as machinery and cutting tools.

Surge in Domestic Demand Fuels the Growth of Lab-Grown Diamonds Market

The growing domestic demand for lab grown diamonds in China is fueling the expansion of the synthetic diamond industry. This demand is driven by shifting consumer preferences, an expanding middle-class, and increasing awareness of the ethical and environmental advantages of lab grown diamonds.

China's middle-class population is expected to reach 600 million by 2030, which will be a significant force in the luxury market. Unlike older generations that favored natural diamonds, younger Chinese consumers particularly Gen Z and millennials are drawn to the affordability, sustainability and versatility of lab grown diamonds. These synthetic alternatives cost up to 30 to 40% less than natural diamonds which makes them an attractive option for budget conscious buyers seeking luxury goods.

Moreover, lab grown diamonds align with the growing ethical and environmental concerns. Many Chinese consumers are choosing lab grown options to avoid the environmental degradation and human rights issues associated with natural diamond mining. This shift in values has increased the adoption of synthetic diamonds particularly in bridal and fashion jewelry.

Furthermore, the strong domestic demand is also bolstered by the government's support for innovation and market growth. For instance, in November 2024, according to the national diamond council, China produces 46 percent of the world's lab grown diamonds, as it offers an affordable alternative to natural diamonds.

HPHT Segment Dominates the China Lab Grown Diamond

High-Pressure High Temperature (HPHT) have cemented their dominance with strong statistics in the China market. Its dominance stems from its cost efficiency, scalability, and suitability for diverse applications.

The HPHT process, which simulates the natural formation of diamonds by exposing carbon to intense pressure and heat, is less capital-intensive compared to the Chemical Vapor Deposition (CVD) method. This affordability aligns with China's focus on cost-effective manufacturing. Additionally, HPHT facilitates rapid production, which makes it ideal for mass manufacturing to meet both domestic and international demand.

Moreover, China's expertise in industrial manufacturing has further optimized the HPHT process, which enables the production of high-quality diamonds at competitive prices. Leading companies such as Zhongnan Diamond and Henan Huanghe Whirlwind heavily utilize this method, which produces diamonds for industrial applications like cutting tools, abrasives and the jewelry market.

Furthermore, HPHT is particularly well-suited for industrial-grade diamonds, which form a significant portion of China's lab grown diamond output. The country's robust demand for industrial diamonds in sectors like construction, electronics, and machinery has further cemented the HPHT method as the preferred choice.

For instance, Henan Province has become a significant center for lab grown diamond production largely due to the widespread adoption of the HPHT method. The region's focus on HPHT technology has positioned it as a key player in domestic and international markets.

Henan Province is Dominating the Lab Grown Diamond Market Share

Henan province is exerting its dominance in the China lab grown diamond. Due to its strategic focus on high pressure high temperature technology, robust manufacturing capacities, and industrial applications.

Henan's dominance is also due to its reliance on the HPHT method for diamond production. HPHT is the most cost effective and scalable technique for mass producing lab grown diamonds, especially for industrial purposes like abrasives and cutting tools. Henan is home to some China' largest HPHT facilities including those operated by companies like Henan Huanghe Whirlwind which specializes in both gem-quality and industrial-grade diamonds. This gives Henan a significant edge in meeting domestic and global demand for both applications.

Moreover, Henan benefits from a strong industrial infrastructure and an established manufacturing ecosystem which includes access to affordable labor, supply chain resources, and advanced equipment. These advantages enable efficient production processes and help to reduce operational costs which makes Henan an attractive location for lab grown diamond producers.

Furthermore, the provincial government's support has also played a crucial role in Henan dominance. Henan has seen investments in research and development which further foster technological advancement in diamond manufacturing. This has led to higher quality lab grown diamonds further reinforcing Henan's competitive position in the market.

Future Market Scenario (2025 – 2032F)

- Supportive policies aimed at promoting local production and reducing reliance on imports are enhancing the domestic market landscape.
- Continuous innovations in production technologies, such as Chemical Vapor Deposition (CVD) and High-Pressure High Temperature (HPHT), have significantly reduced production costs which is boosting the demand for lab grown diamonds.
- Rapid economic growth in China has led to an expanding middle class with increasing disposable income. This demographic shift fuels the demand for luxury goods, including lab-grown diamonds.

Key Players Landscape and Outlook

Continuous innovation characterizes the landscape of lab grown diamond market in China, as the companies compete to outperform one another in terms of cost-effectiveness and quality and innovation. The market prognosis remains positive, owing to the surge in domestic demand and cost-effective manufacturing. Lab grown diamond manufacturers are focused on advancing the technology, and product variety, which will likely define the industry's future. Collaborations and developing technologies are projected to increase competition in this fast-paced market.

For instance, in May 2023, Blackstone acquired IGI from Chinese investment firm Fosun for USD 570 million. IGI is a leading player in the diamond certification market, holding a significant share in the lab-grown diamond certification space globally.

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