

Composite Cylinder Market to Hit \$1.5 Billion by 2030 | Growing Demand for Lightweight Gas Storage Solutions

Global Composite Cylinder Market Grows at 5.7% CAGR | Rising Adoption in LPG, CNG, and Hydrogen Applications

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According to a new report published by Allied Market Research, the [composite cylinder market](#) size was valued at \$828.2 million in 2019 and is projected to reach \$1.5 billion by 2030, growing at a CAGR of 5.7% from 2025 to 2030.

The market is witnessing rapid growth due to increasing demand for lightweight, high-strength gas storage solutions across LPG, CNG, and hydrogen applications.

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Composite cylinder market to hit \$1.5 billion by 2030, driven by rising demand for lightweight, high-strength gas storage solutions."

Allied Market Research

A composite cylinder is a [pressure vessel](#) made from advanced materials such as carbon fiber, glass fiber, or aramid fiber, reinforced with resin. Unlike traditional steel cylinders, these are lighter, corrosion-resistant, and can withstand extremely high pressure. Their safety, efficiency, and portability make them ideal for applications in energy, automotive, healthcare, and aerospace sectors.

□ Key Market Highlights

LPG cylinders dominated the market with a CAGR of 5.2% during the forecast period.

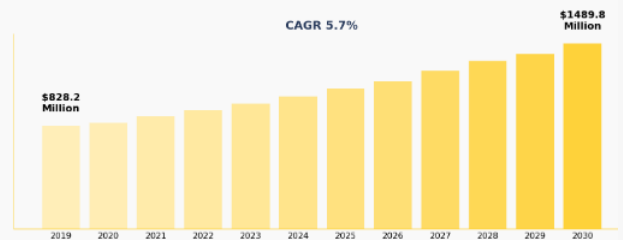
Glass fiber composites remained the most lucrative material segment, growing at 5.5% CAGR.

Report Insights

Market was valued at
\$828.2 Million
2019

Projected to reach
\$1489.8 Million
2030

Growing at a CAGR
5.7% From
2025-2030



Composite Cylinder Market
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Tank Type III cylinders led the market in 2019.

Transportation was the leading end-use sector with 4.7% CAGR, driven by increased CNG and hydrogen vehicle usage.

Asia-Pacific accounted for over 50% of the global market share in 2024.

▯▯ Rising Adoption Across Key Sectors

The composite cylinder market growth is largely driven by the growing use of LPG and CNG cylinders in domestic and industrial sectors, along with expanding use in [hydrogen storage](#) for clean energy applications.

In the energy sector, composite LPG cylinders are increasingly used for residential and commercial gas storage due to their lightweight design and high safety standards. They are also replacing conventional steel cylinders in homes, offering transparency for easy gas level checks and better resistance to rust.

In the transportation sector, composite cylinders play a critical role in CNG and hydrogen-fueled vehicles. With the global push for sustainable mobility, these cylinders enable better fuel efficiency and weight reduction—key factors in the transition toward electric and hybrid fuel systems.

Additionally, in industrial and medical gas storage, composite cylinders are preferred due to their strength, corrosion resistance, and ability to safely handle high-pressure gases such as oxygen and nitrogen.

▯ Market Dynamics

▯ Drivers: Clean Energy and Safety Advantages

The global shift toward clean energy and LPG adoption continues to drive the composite cylinder market forward. Composite cylinders are safer, lighter, and more durable than traditional alternatives, making them an attractive choice for consumers and industries alike. Their resistance to chemical corrosion and explosion-proof design enhances safety, especially in urban environments.

For example, Indian Oil Corporation (IOC) announced in February 2022 plans to build three new LPG bottling plants in Northeast India to boost production capacity by 53%, meeting the surging demand for composite cylinders in the region.

▯ Restraints: Recycling and Disposal Challenges

Despite strong market potential, recycling and disposal of composite materials remain major challenges. Unlike steel, which can be easily recycled, composite cylinders are made from fiberglass, carbon fiber, and resin, making end-of-life processing complex and costly. Current global recycling capacity for composite waste remains limited, creating long-term sustainability challenges that industry players are working to address.

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□ Segmentation Analysis

The composite cylinder market analysis covers segmentation based on cylinder type, material type, tank type, end-use, and region.

□ By Cylinder Type

Hydrogen cylinders are projected to be the fastest-growing segment with a CAGR of 7.7% from 2025 to 2030.

The growing adoption of hydrogen as a clean fuel in mobility, power generation, and industrial applications has accelerated demand for high-pressure composite cylinders.

□ By Material Type

The HDPE pipe/liner segment is expected to grow at a CAGR of 7.6%, driven by its strength, flexibility, and corrosion resistance.

Glass fiber composites remain the most lucrative material type, offering cost-effective strength and durability.

□ By Tank Type

Type II cylinders, featuring a metal liner wrapped with composite materials, are projected to grow fastest at 7.2% CAGR.

These cylinders are extensively used in CNG vehicles, life support systems, and industrial applications.

□ By End-Use

The transportation segment leads with a projected CAGR of 7.8% from 2025 to 2030.

Increasing adoption in CNG and hydrogen-fueled vehicles is driving the demand for lighter and more efficient storage solutions.

□ Regional Insights

The Asia-Pacific region dominated the composite cylinder market and is expected to maintain its leadership, growing at a CAGR of 7.3% during 2025–2030.

Countries such as India, China, Japan, and South Korea are rapidly adopting composite LPG and CNG cylinders for residential and commercial use. Rising urbanization, strong government clean energy policies, and growing middle-class populations are fueling this demand.

In India, for instance, composite LPG cylinders are gaining popularity for domestic use due to their portability, rust-proof design, and enhanced safety compared to steel cylinders. Meanwhile, China and Japan are investing heavily in hydrogen fuel infrastructure, further accelerating regional growth.

□ Competitive Landscape

Major players operating in the global composite cylinder market include: Hexagon Ragasco AS, NPROXX, Amtrol-Alfa, Drägerwerk AG & Co. KGaA, EVAS, FABER INDUSTRIE SPA, Luxfer Gas Cylinders, Quantum Fuel Systems, Sinoma International Engineering Co., Ltd., and AMS Composite Cylinders.

These companies are focusing on capacity expansion, R&D innovation, and strategic partnerships to enhance their product portfolios. Advanced manufacturing technologies and material innovations remain central to maintaining competitiveness.

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□ Conclusion

The composite cylinder market is on a solid growth trajectory, supported by the rising demand for clean energy, safety, and efficiency in gas storage applications. As industries move toward hydrogen and CNG-based solutions, composite cylinders will play a vital role in enabling lighter, stronger, and safer energy systems.

With technological advancements and expanding adoption across automotive, industrial, and residential sectors, the market is expected to remain a key component of the global clean energy transition through 2030.

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David Correa

Allied Market Research

+ + + + +1 800-792-5285

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