

Research Report on China's Automotive Lightweight Materials Industry, 2018-2022

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Abstracts

Automotive lightweighting refers to reducing an automobile's curb weight as much as possible to achieve comprehensive performance improvement without impairing automobile strength and safety. Automotive lightweighting can be realized by the use of lightweight materials, structure optimization and lightweight molding, of which the use of lightweight materials is the most feasible. Automotive lightweight materials mainly include high strength steels, carbon fiber composites and metal alloys.

In 2017, the market size of global automotive lightweight materials exceeded USD 100 billion. At present, North America is the world's largest automotive lightweight materials market, followed by Europe. And Asia-Pacific regions including China have the highest growth rate.

China's automotive industry developed rapidly in the past decade. China had been the world's largest auto manufacturer and seller for nine consecutive years from 2009 to 2017. From 2007 to 2017, China's automobile sales increased from 8.79 million units to 28.88 million units. At the end of 2017, the automobile reserves in China reached 217 million units, second only to the U.S. With the rapid development of the automotive industry, automotive lightweighting has become a new trend.

To reduce environment pressure and the reliance on crude oil imports, the Chinese government set the standard for the average fuel consumption of passenger vehicles to promote automotive lightweighting among automobile manufacturers at the policy level. In recent years, the output of China's automotive aluminum alloy castings increases by about 10% every year. As regards to automotive steel sheets, domestic products have almost replaced imports with a market share exceeding 70%. However, China's carbon fiber industry, troubled by backward technologies and low capacity utilization rate,

requires a large amount of imports. Automotive lightweight materials are mostly capital and technology intensive industries with high barriers to entry. The raw materials are mainly bulk commodities such as iron ores, non-ferrous metals and crude oil whose prices are susceptible to international supply and demand. At present, the supply of automotive high strength steels in China is highly concentrated in a few giants that master the technologies. The markets of aluminum and magnesium alloys are adequately competitive with a large number of industry players. In the carbon fiber industry, low-end capacity is excessive and the output of high performance products is expected to surge as technical barriers are being broken.

According to CRI, in 2015, the average aluminum and magnesium consumption per vehicle in China was 120kg and 1.5kg respectively, representing huge growth potential compared with the global average of 150kg and 5kg respectively. In the context of developing new energy vehicles and reducing fuel consumption, lightweight materials can ensure vehicle safety, reduce curb weight and increase endurance mileage, making them the first choice of automobile manufacturers.

CRI expects that the market size of automotive lightweight materials will grow gradually from 2018 to 2022 and exceed CNY 300 billion in 2022 with the upgrading of automobile consumption, the increasing importance of lightweight materials to the acceleration, braking and noise control of automobiles, and the higher penetration of lightweight materials in high-end automobiles.

Topics Covered:

Concept and methods of automotive lightweighting

Development environment of the automotive lightweight materials industry

Competition in China's automotive lightweight materials industry

Major automotive lightweight materials manufacturers in China

Analysis on production costs and prices of automotive lightweight materials in China

Driving forces and market opportunities for China's automotive lightweight materials industry

Forecast on supply of and demand for automotive lightweight materials in China from 2018 to 2022

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