+44 20 8123 2220
info@marketpublishers.com

Automotive Lightweighting Market by Material (Metals, Composites, Plastics, Elastomers), Application & Component (Frame, Engine, Exhaust, Transmission, Closure, Interior), Vehicle (ICE, Electric, Micro-mobility & UAVs) and Region - Global Forecast to 2027

https://marketpublishers.com/r/A32382C6988EN.html
Date: February 2023
Pages: 353
Price: US$ 4,950.00 (Single User License)
ID: A32382C6988EN

Abstracts

The automotive lightweighting market is projected to grow from USD 73.9 billion in 2022 to USD 101.5 billion by 2027, at a CAGR of 6.5% for the projected period. The key growth factor driving the automotive lightweighting market is the lowered emission limits in new emission regulations, increased fuel efficiency limits, and increased vehicle weight. In developing countries like India, the governing body has implemented Bharat VI norms since 2020, Europe has Euro VI, and China has VI standards. With such emission regulations, which have highly reduced emission limits, OEMs are using lightweight materials to reduce the extra weight added to the after-treatment devices. Replacing cast iron and traditional steel components with high-strength steel (HSS), magnesium (Mg) alloys, aluminum (Al) alloys, carbon fiber, and polymer composites can directly reduce the curb weight of the vehicle body, which reduces the vehicle's fuel consumption. For instance, in 2019, the Hyundai Motors World Rally Teams incorporated a wide usage of lightweight CFRP in its rally spec i-20 model and its RM15 concept that featured an aluminum spaceframe and CFRP body panels, which resulted in an overall weight reduction of 195 Kg. And in 2020, Chevrolet Corvette Stingray incorporated an engine bracket – made from high-performance aluminum alloy material (HuCrAlloy) - that weighs less than 1.5 pounds and underwent a 40% mass reduction. Thus, it is evident that incorporating lightweight materials to achieve the norms and regulations set by the governing bodies will drive the lightweight market globally.

“HEV segment is speculated to drive the electric vehicle lightweighting market.”

+44 20 8123 2220
info@marketpublishers.com

Limited charging infrastructure in developing countries leads to increased demand for hybrid vehicles over electric ones. PHEVs/HEVs are mostly premium category vehicles. Hence, applications in interiors such as dashboards, seats, and upholstery are likely to have a higher demand for lightweight materials to improve aesthetics. HEVs are projected to dominate the electric & hybrid vehicles lightweight market. Furthermore, the increasing HEV sales, which have almost doubled from 3,057,000 units in 2018 to 6,964,000 units in 2021, make them a promising market for automotive lightweight. HEVs have powertrain, body structures, chassis, motors, batteries, and suspension systems. These systems/components can be easily replaced with lightweight solutions to achieve desired curbed weight by increasing the vehicle's fuel efficiency. For example, Toyota Prius Hybrid in 2012 had a curb weight of 1.63 tons.

In contrast, the new 2022 Prius weighs 1.51 tons, with the implementation of lightweight materials in the car in the powertrain and body structure. It is expected that the Asia Pacific region will lead the HEV lightweight market in terms of volume and value. This is mainly because of the OEMs from this region, who invest heavily in developing batteries and advanced components for HEVs. For instance, Toyota (Japan), on 18th October 2021, invested USD 1.29 billion in manufacturing batteries that will be used in gas-electric hybrid and electric vehicles. Hyundai (South Korea), in January 2020, announced the launching of 6 plug-in hybrid cars and two fuel-cell electric cars by 2025. Such initiatives from the domestic OEMs are expected to increase the scope of lightweight in HEVs.

“Europe is anticipated to be the second largest automotive lightweighting market by 2027.”

According to MarketsandMarkets analysis, Europe is projected to be the second-largest market for automotive lightweight materials by 2027. The passenger car production in Europe was 22,609,000 units in 2018 and 17,517,000 units in 2021. The demand for the forecast years (2022-2027) is estimated to be steady, with a CAGR of 1.28%. Furthermore, the region hosts many of the leading premium car passenger car manufacturers, including Mercedes (Germany), BMW (Germany), Volvo (Sweden), JLR (UK), and others. This is also one of the key reasons for the demand for luxury and premium cars, particularly with an SUV being the most popular segment. Some of the other key reasons for this trend are that the consumers in this region are willing to spend extra money for the safety, comfort, and driver assistance features.

However, these additional features increase the overall weight of the vehicle, which affects the fuel economy, performance, and emission characteristics of the vehicle. For these reasons, the OEMs incorporate lightweight materials such as the Aluminum, Magnesium and other composites, making the growth of automotive lightweight more promising. Furthermore, many OEMs such as Stellantis, Covestro AG, and Thyssenkrupp are concentrated in Europe and investing heavily in R&D to create new and advanced lightweight materials that comply with stringent emission and fuel consumption regulations. Europe has Euro 6 norms that are being followed by other members in the EU, which demand strict reduction of pollutants like NOx and Co2 to improve the vehicle's fuel economy. The region has also mandated that the average emission of all models sold by an OEM needs to drop from 75 grams of CO2 per kilometer by 2025 and beyond. Such emission reduction targets are leading to the lightweight of vehicles in Europe.

In-depth interviews were conducted with CXOs, VPs, directors from business development, marketing, product development/innovation teams, independent consultants, and executives from various key organizations operating in this market.

By Company Type: Tier 1 companies - 70%, Tier 2 - 20%, Other- 10%

By Designation: Manager Level – 60%, C Level - 25%, and Others - 15%

By Region: Asia Pacific – 35%, North America - 30%, Europe - 20%, and Rest of the World – 15%

The automotive lightweighting market is led by globally established players such as BASF SE (Germany), Covestro AG (Germany), LyondellBasell Industries Holdings B.V.(Netherlands), Toray Industries (Japan), and ArcelorMittal (Germany).

Research Coverage:

The study segments the automotive lightweighting market and forecasts the market size based on Material Type (Metal, Aluminum, Magnesium & Titanium, Composite, Plastic, and Elastomers), By Application (Body in Weight, Chassis & Suspension, Powertrain, Closures, Interior and Others), By Components (Frames, Wheels, Bumpers & Fenders, Engines & Exhaust, Transmission, Doors, Hood & Trunks Lid, Seats, Instrumental Panel and Fuel Tanks), By Vehicle Type (Passenger cars, LCV, Trucks, and Buses), BY Electric and Hybrid Vehicles (BEV, PHEV, FCEV, Trucks, and BUS), Electric Vehicles Lightweighting Market, By Material type (Metal, Aluminum, Magnesium & Titanium,

+44 20 8123 2220
info@marketpublishers.com

Composite, Plastic, and Elastomers), Micro-mobility Lightweighting Market, By Material Type (Aluminum, Composite, Plastics, and others) and Region (Asia Pacific, Europe, North America, And Rest of The World).

The study also includes an in-depth competitive analysis of the market's key players, their company profiles, key observations related to product and business offerings, recent developments, and key market strategies.

Key Benefits of Buying the Report:

The report will help the key market players operating in the automotive lightweighting market with information on the closest approximations of the revenue numbers for the overall automotive lightweighting market and the sub-segments. This report would also help stakeholders understand the fastest-growing and largest market for automotive lightweight at regional and global levels for various sub-segments covered in the study. The report helps stakeholders to understand the competitive landscape, market share analysis and key growth opportunities and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report also helps stakeholders understand the market's pulse and provides information on key market drivers, restraints, challenges, and opportunities.

+44 20 8123 2220
info@marketpublishers.com

Contents

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

6 AUTOMOTIVE LIGHTWEIGHTING MARKET, BY MATERIAL

This chapter is further segmentized into region level – North America, Asia Pacific, Europe and Rest of the World.

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

7 AUTOMOTIVE LIGHTWEIGHTING MARKET, BY APPLICATION

This chapter is further segmentized into region level – North America, Asia Pacific, Europe, and Rest of the World.

+44 20 8123 2220
info@marketpublishers.com

8 AUTOMOTIVE LIGHTWEIGHTING MARKET, BY COMPONENT

This chapter is further segmentized into region level – North America, Asia Pacific, Europe, and Rest of the World.

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

9 AUTOMOTIVE LIGHTWEIGHTING MARKET, BY VEHICLE TYPE

This chapter is further segmentized into region level – North America, Asia Pacific, Europe, and Rest of the World.

11 ELECTRIC AND HYBRID VEHICLE LIGHTWEIGHTING MARKET, BY MATERIAL TYPE

This chapter is further segmentized into vehicle types – BEVs, PHEVs, HEVs, Buses and Trucks

12 MICROMOBILITY LIGHTWEIGHTING MARKET, BY MATERIAL TYPE

This chapter is further segmentized into region level – North America, Asia Pacific, and Europe.

(USD MILLION)
TABLE 273 UAV LIGHTWEIGHTING MARKET, BY MATERIAL TYPE, 2022–2027 (USD MILLION)
13.2 ALUMINUM
13.2.1 MOSTLY PREFERRED OVER CARBON FIBER TO DESIGN FRAMES OF UAVS
13.3 COMPOSITES
13.3.1 CARBON FIBER REINFORCED POLYMERS (CFRP)
13.3.1.1 WEIGHS 5 TIMES LESS THAN CONVENTIONAL STEEL DRONES
13.3.2 GLASS FIBER REINFORCED POLYMERS (CFRP)
13.3.2.1 WEIGHS 30% LESS THAN ALUMINUM-BASED DRONES
13.4 PLASTICS
13.4.1 USED IN DEVELOPING ENCLOSURES OF COMPONENTS USED IN UAVS
13.5 ELASTOMERS
13.5.1 USED TO ABSORB IMPACT STRESS AND NVH FROM COMPONENTS
13.6 OTHERS
13.6.1 EXCELLENT HEAT RESISTANCE IN HARSH AND TOUGH CONDITIONS

14 AUTOMOTIVE LIGHTWEIGHTING MARKET, BY REGION

This chapter is further segmentized into material types – Metals, Composites, Plastics, and Elastomers.
14.1 INTRODUCTION
14.1.1 RESEARCH METHODOLOGY
14.1.2 ASSUMPTIONS/LIMITATIONS
14.1.3 INDUSTRY INSIGHTS
FIGURE 47 AUTOMOTIVE LIGHTWEIGHTING MARKET, BY REGION, 2022 VS. 2027 (USD BILLION)
TABLE 274 AUTOMOTIVE LIGHTWEIGHTING MARKET, BY REGION, 2018–2021 (TMT)
TABLE 275 AUTOMOTIVE LIGHTWEIGHTING MARKET, BY REGION, 2022–2027 (TMT)
TABLE 276 AUTOMOTIVE LIGHTWEIGHTING MARKET, BY REGION, 2018–2021 (USD BILLION)
TABLE 277 AUTOMOTIVE LIGHTWEIGHTING MARKET, BY REGION, 2022–2027 (USD BILLION)
14.2 ASIA PACIFIC
14.2.1 ASIA PACIFIC: RECESSION IMPACT
FIGURE 48 ASIA PACIFIC: AUTOMOTIVE LIGHTWEIGHTING MARKET SNAPSHOT

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

15 COMPETITIVE LANDSCAPE

16 COMPANY PROFILES

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

I would like to order

Product name: Automotive Lightweighting Market by Material (Metals, Composites, Plastics, Elastomers), Application & Component (Frame, Engine, Exhaust, Transmission, Closure, Interior), Vehicle (ICE, Electric, Micro-mobility & UAVs) and Region - Global Forecast to 2027

Product link: https://marketpublishers.com/r/A32382C6988EN.html

Price: US$ 4,950.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/A32382C6988EN.html

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:

Last name:

Email:

Company:

Address:

City:

Zip code:

Country:

Tel:

Fax:

Your message:

**All fields are required

Custumer signature _______________________________________

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at https://marketpublishers.com/docs/terms.html

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970