

The future belongs to the lightweights



Plastics have become an indispensable part of automotive engineering. Up to one quarter of the materials in today's modern mid-sized vehicles are polymer-based, and most of these are used in the body and interior panels. The variety of the plastics in these applications is also large – a total of up to 150 different polymers are used in automotive engineering. What they all have in common is that they enable more cost- and resource-efficient manufacturing, while making cars lighter and thus more fuel efficient. This in turn leads to lower CO₂ emissions.

Because the European Commission agreed on stricter CO₂ limits in new cars and small trucks and vans in early 2019, every gram is going to count when it comes to helping reduce vehicle fuel consumption. As a general rule of thumb, reducing vehicle weight by 100 kilograms results in an average reduction in fuel consumption of 0.3 liters per 100 kilometers. The increasing use of fiber-reinforced composites—plastics fortified with glass or carbon fibers – will help automakers implement the EU requirements in the future. European automakers are forecast to use roughly 47,000 metric tons of processed carbon-fiber-reinforced plastics in 2019, for example, but in 2020 that figure is expected to rise to around 59,000 metric tons.

These composite materials, as they are called, can be used for producing components in which the stability is comparable to that of conventional metal parts—yet weigh less and are significantly more

efficient to manufacture. Automobile manufacturers and suppliers can use VESTALITE® products from Evonik Resource Efficiency to produce customized, cost-effective, high-performance fiber composite components whose excellent surface characteristics and outstanding mechanical properties make them suitable replacements for steel and aluminum. But that's not all: the emissions generated from processing these materials are also very low. Automakers make innovative use of VESTALITE® products in areas such as roofs, hoods, trunk lids, and wheel rims, as well as in components for new drive and mobility concepts.

The name says it all: Resource Efficiency GmbH is where Evonik bundles its global specialty chemicals business, supplying customers in a variety of industries with environmentally friendly system solutions that make efficient use of energy and raw materials. The segment's motto? **More value. Less resource.**

More value. Less resource. A response to two megatrends – sustainability and resource conservation – this mission is about protecting the planet and securing the well-being of future generations.

VESTALITE® is part of the Resource Efficiency product portfolio. VESTALITE® helps to save energy in the mobility sector. **And so does Resource Efficiency.**

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