

Sustainable Innovation Portrait

Kevin Woock, Adhesive Technologies, United States

Kevin Woock, Global Market Segment Manager, talks about lightweighting in the automotive industry and explains how Henkel's unique portfolio of solutions makes safer, more efficient vehicles possible.

Why are lightweighting solutions important to the automotive industry?

The main driver is regulation. By 2025, governments around the world will have in place harmonized regulations, designed to boost vehicle fuel efficiency and reduce tailpipe emissions. These standards are creating demand for new solutions that can reduce vehicle weight, improve fuel efficiency and cut CO₂ emissions.

In addition, we are seeing a trend towards alternative energy and connected vehicle systems – which can be both costly and heavy. Lightweighting technologies can help manufacturers offset the additional weight and costs of larger batteries, electronics, as well as braking and damping systems.

According to McKinsey & Company, the share of lightweight materials used in automotive production will more than double in the next 20 years. With this in mind, Henkel is actively developing solutions – like our Teroson EP 5000 Series Structural Adhesives technology – that enable automotive manufacturers to join mixed materials.

How do lightweight vehicles compare to conventional ones?

If you were to park two cars side-by-side (one built with lightweight materials and the other without), you would not perceive any difference between them. The vehicles look, feel and sound identical. The differences are inside of the car. For example, our lightweight materials can enable quieter and more durable vehicles, while ensuring comfort, strength and safety.

Interestingly, when Ford Motor Company “field tested” its new all-aluminum light pick-up truck, it disguised several test units as conventional 2014 models and sent them to industrial work sites, professional truck racing events, and media test drives. No one detected the change, which just goes to show that new lightweight vehicles also perform equal to or better than previous models.

How was the idea behind the LightenUp! campaign developed?

Henkel has always worked to develop faster, better, and cheaper technologies that meet market demands. But following the announcement of the 2021 European and 2025 North American fuel economy standards, nearly every global automobile manufacturer asked Henkel to support their lightweighting efforts.

We saw this as an opportunity to accelerate the development of sustainable, lightweight technologies in nearly every application area (i.e. adhesives, sealants, and surface technologies). From there we developed the concept for “Lighten Up,” to communicate our full range of lightweighting solutions to customers and partners.

What has been the response from Henkel's automotive customers?

The most common response to our LightenUp! campaign is: "I knew Henkel, but I did not know that Henkel supplied that particular technology."

So the campaign has been helpful in terms of explaining Henkel's full spectrum of customized solutions ranging from adhesives and sealants to lubricants and functional coatings. With such a broad and unique portfolio, it can be challenging to communicate the breadth of resources and capabilities Henkel has to offer. This is why the LightenUp! campaign is so important.

Customers are not the only ones taking notice. Henkel has won numerous industry innovation awards – including several Automotive News PACE Awards – since launching the LightenUp! Campaign. Our marketing team has done a tremendous job communicating Henkel's value.

What advice on innovative thinking can you share with others?

Albert Einstein once said, "If I had one hour to solve a problem, I would spend 55 minutes thinking about the problem, and five minutes solving it." The point being: you have to understand the challenge inside and out before you can develop an innovative solution.

For us, this means working closely with vehicle manufacturers and suppliers as early as the design stage to understand their needs and offer lightweight-enabling solutions, not just chemicals or parts.

When they first began developing mixed-material vehicles, automotive manufacturers explained, "we need new solutions that work with our existing infrastructure, because new infrastructure would be too costly." So Henkel developed the Bonderite[®] Flex process for the surface treatment of aluminum-steel vehicles. The result: lighter vehicles, better corrosion protection, and less waste – while using existing infrastructure.