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ExxonMobil's Exxpro line gives EVs a boost

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SPRING, Texas—For many years, auto makers looked to make their vehicles lighter, switching out materials where possible to shave off a few ounces here and a few pounds there.

But with the advent of electric vehicles and their beefed-up battery systems, weight is being added back on to cars, trucks and SUVs as mobility transitions over time.

For travel, weight impacts vehicle range—whether the fuel is a full tank of gas or a fully charged battery.

So it's through that lens that ExxonMobil Corp. is out with a new formulation of its Exxpro elastomer, which was developed in the 1990s and used in a variety of applications, including bicycle tires, air conditioning hoses and pharmaceutical uses.

The new Exxpro 3563 is designed specifically for the inner liners of vehicle tires and works to decrease air leakage when used in place of halobutyl.

“Inclusion of high p-methyl styrene concentrations leads to lower segmental mobility and lower free volume, resulting in significant permeability reduction compared to halobutyl rubbers,” ExxonMobil said on its website.

Because less air leaks out over time with Exxpro 3563, ExxonMobil said that proper tire inflation can be better maintained. Keeping tires at their proper inflation for a longer time will help the heavier electric vehicles maintain their range even with the added weight.

“We are constantly monitoring the trends that are going on in the marketplace. We've seen a lot of different trends emerge over the last several years, and we think they are extremely important for future mobility,” said Sujith Nair, se-

nior market developer for specialty elastomers and butyl at ExxonMobil.

“To note is the monstrous rise in electric vehicle fleets,” he said.

There once was a time when there were just a few companies manufacturing electric vehicles, but that's given way to mainstream auto makers seeing a future in non-combustion engines. Growth in this electric segment has exploded, growing more than 40 percent annually in the past few years.

“That's pretty huge,” Nair said. “This market is growing at an astronomical pace.”

He added that the weight of battery systems in electric vehicles puts more pressure on tires, which can cause them to lose air more quickly. And when tires lose air, rolling resistance increases. That means mileage decreases, fuel consumption rises and more carbon dioxide emissions are produced.

This is where Exxpro 3563 comes in. Tests show rolling resistance may improve by 10-20 percent when tires use Exxpro as part of the inner liner compound, Nair said. Additionally, weight of the liner can be reduced by around 20 percent when compared with the use of traditional halobutyl. This translates into an improved vehicle mileage of between 3-7 percent, Nair said.

Electrification, connectivity and autonomy are driving major changes for auto makers, and ultimately their suppliers.

“We think that this emergence of megatrends is going to drastically change the way automotive components are being designed and the way that automotive materials, in general, will be thought about in the future,” Nair said.

“Every component of the vehicle will contribute to the improvement of the effi-



ExxonMobil Corp. is out with a new formulation to help tires retain air even as vehicles get heavier.

ciency for all of these trends. That's basically what we think,” he said. “All components of cars have to be more efficient.”

A driving force in all of this will be manufacturers continuously looking to improve vehicle range, and ExxonMobil believes its Exxpro line can play a significant role in this endeavor by helping tires maintain inflation and reduce rolling resistance.

ExxonMobil also is out with a new offering in its long-established Santoprene line aimed at being an alternative to EPDM in automotive seal applications.

Santoprene High Resilience (HR) TPV, the company said, offers lighter weight and a cost advantage over EPDM in what is known as semi-dynamic and dynamic weather seals. The company already provides Santoprene for static weather seals such as those found around windshields. But the new offering allows the line to be used in applications such as glass run channels, which includes the seals around movable windows.

Santoprene HR also is recyclable, ExxonMobil said.

The material processes like a thermoplastic and can be extruded or injection molded, and does not require curing like EPDM, Nair said.