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Deep rubber ties continue to push ExxonMobil forward

By Bruce Meyer
Rubber & Plastics News Staff

HOUSTON—ExxonMobil Chemical Co. operates in three main elastomer markets, and in each case the firm was involved right from the start.

That means the Houston-based business of ExxonMobil Corp. has seen its ExxonMobil butyl rubber business operate for roughly 80 years, its Vistalon-brand EPDM unit for 55 years and its Santoprene-brand thermoplastic vulcanizate operation—the baby of the family—for more than 40 years.

And with that history, the company believes it has the knowledge, the technical know-how and the supporting business in place to continue achieving success now and in the future, whether that means in traditional businesses or the evolving new world of transportation, said Kurt Aerts, ExxonMobil vice president for specialty elastomers and butyl polymers.

“We’re really committed to this business,” he said. “The specialty elastomers and butyl business is just one of our businesses, but given our long history, given our proven track record and the fact that we have been able to commit to these businesses, it remains a very important one.”

While each of the three families has applications in industrial and consumer markets, it’s really in the auto and tire businesses that the product lines find their main growth opportunities. Aerts said ExxonMobil is the market leader for both butyl and Santoprene, and in the top three with its Vistalon EPDM material.

Its butyl unit mainly produces halobutyl rubber for tire innerliners, which are critical for air retention he said is vital for tire performance and reduction of rolling resistance, leading to increased fuel economy.

Vistalon has excellent sealing performance, ultraviolet resistance, and chemical and high temperature resistance, so Aerts said they mainly are used in sound dampening and sealing.

And the Santoprene TPVs bring top-notch processability, durability, sealing

and ease of recycling, making them low-cost, high-efficiency lightweight solutions for a broad range of auto parts, Aerts said.

The auto and tire industries, he added, are looking at about 3 percent annual growth on a trend line basis, with the underlying drivers being a growing middle class and urbanization, with the biggest growth opportunities being in China.

“We see the growth for our products being a bit more than that because there are increasing trends of quality standards, performance and fuel efficiency where we see the demands for our products growing slightly above those industry numbers,” the ExxonMobil official said.

Sustainability is another big driver moving into the future as it’s “becoming increasingly important and it’s the right thing for society to be focusing on maximizing existing resources while improving the environment,” Aerts added.

“Automotive overall for us is a pretty healthy industry. The number of cars and light trucks globally is expected to double between now and 2040, to about 1.7 billion to 1.8 billion.”

Supply security

A major key to ExxonMobil’s success in these elastomer markets is supply security, he said. The firm operates globally and looks at debottlenecking projects on a regular basis to boost capacity, but also has invested recently in a series of new projects to ensure its supply security can be guaranteed into the future.

One recent investment was with its joint venture partner, Saudi Basic Industries Corp., where the firms added butyl and EPDM production to their Kemya joint venture operation in Jubail, Saudi Arabia. ExxonMobil has 100 percent of the marketing rights for butyl and 50 percent for EPDM.

The JV with Sabic started in polyethylene and expanded more recently to include

rubber. The firm said the operation has the capacity to produce up to 400,000 metric tons of rubber a year.

While ExxonMobil generally prefers to go with full ownership, he said, there are certain exceptions where it make sense to enter into a partnership.

Now the firms are looking to expand the JV in the U.S. Gulf Coast, looking at integrating ethylene and expanding in polyethylene. “It just shows that’s how strategic relationships evolve, and that’s where the win-win opportunities come together,” he said.

ExxonMobil also has started up a new butyl rubber facility in Singapore to further build on the integrated strength of that complex, along with serving customers in the Asian markets, according to Aerts. That will bring capability to make up to 140,000 tons of butyl annually. And ExxonMobil is close to starting up an expansion in Newport, Wales, that will boost global capacity to produce Santoprene by 25 percent.

“That’s clearly one element of demonstrating our commitment to these businesses by continuing to invest in capacity expansions,” he said.

Supply security is a vital consideration in the value chain, he said, because sometimes the materials may be used in only small amounts in the end product, but are essential in making the tire or vehicle component successful in its performance.

ExxonMobil has a couple of factors that Aerts said differentiates itself from competitors in terms of supply security. First is that ExxonMobil has plants globally that can supply and ship products where needed. “We’re not tied into one or two supply points,” he said. “We have multiple supply points globally that can serve and back up each other.”



Aerts



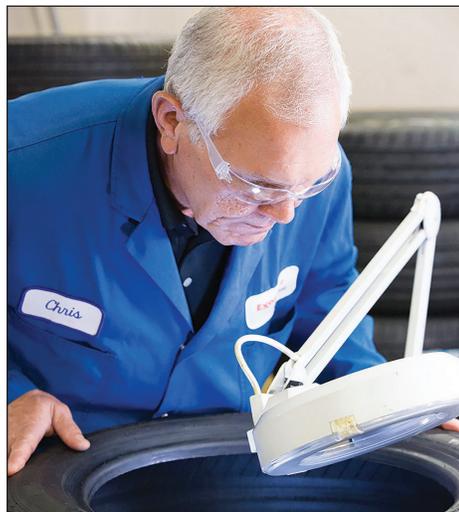
Architecture of a tire.

Additionally, by being part of ExxonMobil, in many cases it is fully integrated in terms of its feedstocks that can be supplied internally. While not 100 percent integrated, on its key raw materials the firm is highly integrated within the ExxonMobil family of operations, Aerts said.

“Our global footprint, global supply chain capability to ship and transfer, and our upstream feed integration through our raw materials that go into making the synthetic rubbers that we supply are three elements that are really critical to our business success,” he said.

Product innovation

Of course, capacity and supply security are only part of the equation to ExxonMobil's success in the SR sector. Aerts said the chemicals firm continues to invest in product innovation, technology support, quality and marketing sales support.



A technician studies a tire.

The company tends to view each of the products as specialty, rather than commodity, in nature, he said.

For example, butyl is difficult to make and is a small component in the overall tire, but key to its performance. “In that sense, the commodity/specialty is a lens that many people use differently,” Aerts said. “We like to really call it a tailored product to the needs of the customers in the value chain.”

Santoprene TPVs are similar in that regard, where it's vital in terms of light-weighting in cars, while maintaining or improving performance. “Again, it is not easy to make this product in a consistent fashion, but with our capabilities we are able to do that and therefore we bring the solutions to the customers,” he said.

The elastomers business within ExxonMobil also is having more opportunities to collaborate with other units within the company. Aerts said as the automotive market changes, they have access to the sector through ExxonMobil's fuels and



Technicians work on one of the firm's injection molding machines.

lubes value chain. The firm also sells polypropylene and some other materials into automotive, bringing other “synergistic opportunities” in automotive.

This bodes well for the elastomers unit to be a key part of the ExxonMobil organization. “We have many cross-business opportunities, leveraging our global capability in the way we manufacture, the way we do technology and in our supply chain organization,” Aerts said. “We believe it fits very strategically and very well not only into the ExxonMobil Chemical structure but into ExxonMobil Corp. on a broader scale.”

Balancing market trends

The elastomer markets ExxonMobil plays in are competitive and will continue to be, whether that means meeting the needs of a light vehicle market projected to double in roughly the next two decades or supplying rubber materials for electric and autonomous vehicles as those sectors grow.

“There are clearly some inherent advantages that we believe we have from our years of experience working with our customers and the value chain,” Aerts said. “And we continue to innovate and not stand still, because that is something we cannot do.”

While it's unclear which individual changes will prevail in the transitions, trends such as autonomous vehicles, shared vehicles, electrification and power train advancements will lead to interesting challenges for both the original equipment makers and the entire value chain.

And balancing the growth in traditional businesses versus the evolving technologies play into ExxonMobil's approach to sustained innovation. “You see those transformation trends are there, but I don't think anybody can predict how the future will look like,” he said. “Everyone has to work with various scenarios and be open for any of these to be successful because it's very early in the transformation.”

So ExxonMobil will continue to develop

materials with better performance to enhance value in the traditional automotive space with internal combustion engines, he said, because there still is much work going on and opportunities to make cars lighter and more efficient through the use of the firm's elastomer offerings.

For example, if the firm could convince global tire fleets to use the best available technologies—the halobutyl for innerliners—there is the potential to save up to about 1 billion gallons of fuel a year.



ExxonMobil's butyl rubber plant in Singapore.

And with electric vehicle sales starting to grow, ExxonMobil estimates EV range can be improved up to 8 percent by boosting the air retention in the tires. Aerts said the company is doing a “real world” test to validate this finding and expects to have results back by the end of the year.

Its willingness to look at innovation and serving new technology is proof, he said, that while ExxonMobil is proud of its long heritage and the brands it has in its rubber material units, it also is looking toward long-term future needs in the market.

“We are committed to these businesses to invest in new capacity, but also to collaborate with our customers in the value chain, listening to our customers, understanding their needs, following these transformational market trends that are happening in the automotive industry and continue to look forward to be part of the solution,” Aerts said. “And that's what we're really excited about.”