

Rubber & Plastics News[®]

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Flexaust adds to Indiana facilities

By Bruce Meyer

Rubber & Plastics News Staff

WARSAW, Ind.—Flexaust Co. Inc. is adding a 25,000-sq.-ft. expansion that will connect two buildings at its complex in Warsaw, freeing up space for new manufacturing and provide a single spot for finished goods inventory.

The industrial hose and ducting producer is spending about \$2.5 million on the project, including another expansion at an adjacent plant, according to Mike Harvey, the firm's vice president general manager.

Flexaust previously had two separate facilities on adjacent property that the expansion will join. The firm has occupied one since the 1970s, and Harvey said one

"We had enough room to put 25,000 square feet between the buildings and join the structures."

Mike Harvey



was purchased in the 1990s after Schauburg Group purchased the firm. An additional 15,000 square feet was added to one of the buildings in 2006, but now the firm is out of space.

"The logical thing was to add on between the buildings," he said. "We had enough room to put 25,000 square feet between the buildings and join the structures."

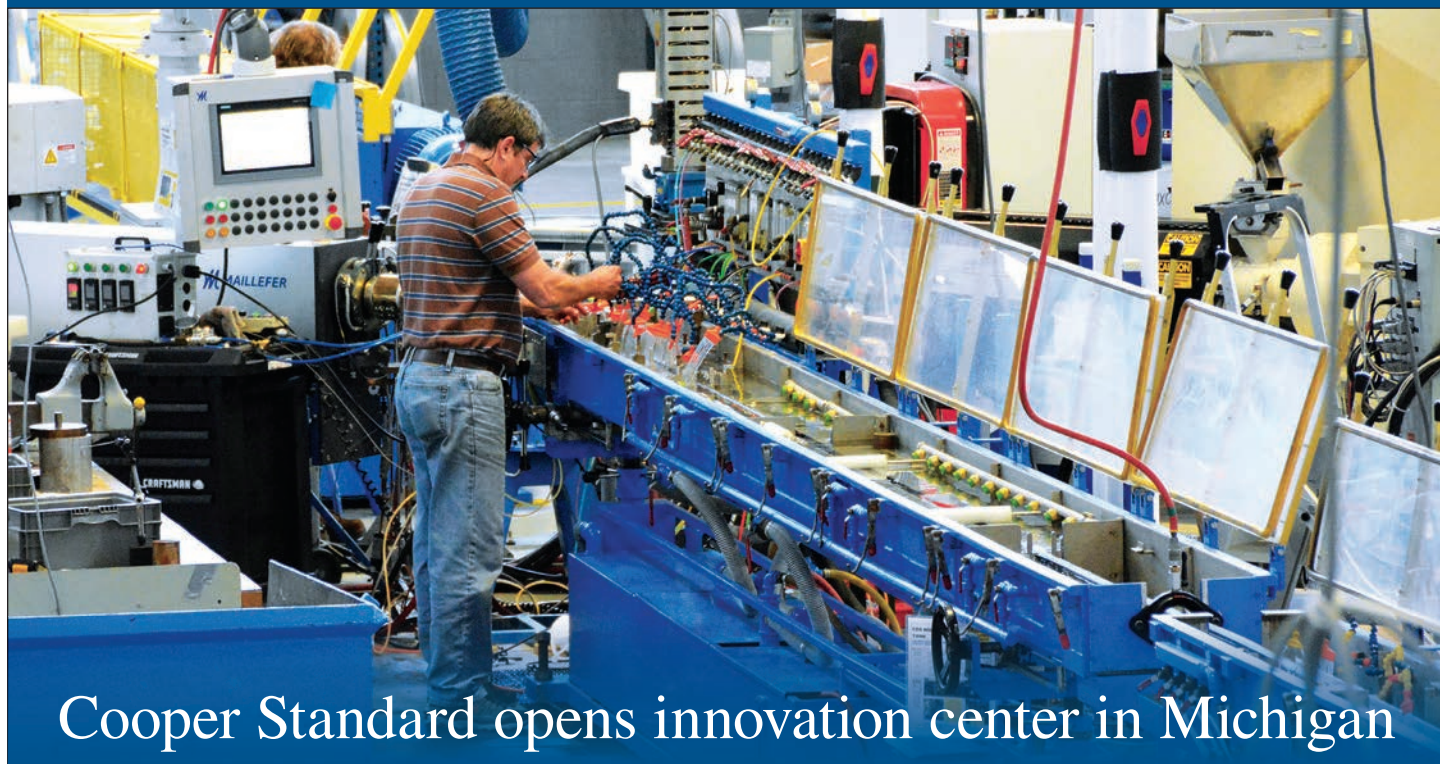
Flexaust broke ground on the project in May and is in the process of moving into the new space, Harvey said. The company was awarded tax abatement from the state and county governments in exchange for investing \$2.5 million and adding 20 jobs over the next three years, he added.

Right now, the hose producer employs close to 200, and Harvey said the additions will push it to about 215. Flexaust employs 255 company-wide.

The first part of the project, which will bring the combined facility to about 240,000 square feet, will be to centralize

See **Flexaust**, page 21

Preparing for the future



Cooper Standard opens innovation center in Michigan

Extrusion lines at Cooper Standard's Livonia, Mich., facility allow new product testing without interrupting production.

By Chris Sweeney

Rubber & Plastics News Staff

LIVONIA, Mich.—A wild, fun future is on the horizon for the automotive industry, and Cooper Standard Automotive Inc. is prepared to meet it head on.

The firm recently opened a new 137,750-sq.-ft. global technology center in Livonia, offering capabilities in material science, tooling, development, production and validation. The site will serve as the company's global hub for innovation and is one of three regional technical centers—with similar facilities in Shanghai and Lindau, Germany.

The Livonia center will employ up to 94 people at full capacity, consolidating the assets and capabilities from its Farmington Hills, Mich., technical center and Bowling Green, Ohio, test lab.

"We were committed to putting in place a world class technology center in North America," Chief Operating Officer Keith Stephenson said. "We wanted to go all the way from material science, creating new materials, through prototyping, tooling and into production-ready. We can go from material science to a finished product that we think is production quality. We think that is a great

opportunity. That material science is going to touch on all of our product lines, and we want this facility to be one of three like this in the world for Cooper Standard."

Investing in innovation

Cooper Standard has been investing in innovation for some time now, and the Livonia center is just the latest piece as it gets ready to develop parts that will help shape the automotive industry's future.

The center leads Cooper Standard's
See **Cooper**, page 22

Motion Industries acquires Apache

By Kyle Brown

Rubber & Plastics News Staff

BIRMINGHAM, Ala.—Motion Industries Inc. has acquired Apache Inc. in a deal that is part of Motion's continuing effort to build its belt business.

The deal was closed Nov. 1 and terms were not disclosed.

Moving forward, Apache will go to business as Apache, a division of Motion Industries, according to Tony Cefalu, senior vice president of Motion Industries.

"The Apache name is a recognized brand," he said. "We certainly wouldn't do away with that right now, and I don't know that we ever will."

Apache's employees—including President and CEO Tom Pientok, among oth-

ers—will stay with the purchase, bringing their experience along as part of the agreement.

"What we're really buying, what we really need are the people. If Tom and his group had said, 'We just want to go,' we wouldn't really have been interested," Cefalu said. "We can buy inventory and buildings. We can buy equipment. But we need the expertise they bring along with it."

There are currently no plans for consolidations, and Motion is looking to utilize Apache facilities for Motion customers, he said. Apache has seven sales and production locations in the U.S.

"At the same time, we're still committed to their model of selling through distribution for those who want to continue to

See **Motion**, page 21



Cefalu

Fenner Dunlop releases a new belt, part of our belting special report beginning on Page 10.



Save the Date

2018 ITEC TIRE MANUFACTURING
SEPT. 11-13, 2018 AKRON, OH, USA

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Bosch denied dismissal from Volkswagen diesel lawsuit

SAN FRANCISCO—A judge in San Francisco federal district court has denied the motion of Robert Bosch GmbH and Robert Bosch L.L.C. to dismiss Bosch from the Volkswagen “Dieselgate” class action lawsuit.

The case is a multidistrict litigation brought by VW franchise dealerships, claiming that Bosch conspired with the auto maker in 2005 to install “defeat devices” in Volkswagen TDI vehicles that caused falsely low readings of diesel emissions levels.

Attorneys for the franchise dealers also claim that Bosch collaborated with Volkswagen A.G. in a scheme to promote the TDI vehicles as environmentally friendly and compliant with government emissions standards worldwide.

The lawsuit accuses Bosch of violating the Racketeer Influenced and Corrupt Organizations Act in its alleged collusion with VW, according to Hagens Berman, the law firm representing the franchise dealers.

In upholding RICO claims against Bosch, the court also upheld trebling of damages against the company, a Hagens Berman press release said.

Bosch said it was disappointed in the San Francisco court’s decision.

“The court was required to accept as true the allegations in the plaintiffs’ complaint, many of which were without foundation,” the company said. “Bosch takes seriously the allegations of manipulations of diesel emissions and is cooperating with investigations of these matters in multiple jurisdictions.”

Applying the standards of RICO, “the franchise dealers have plausibly alleged multiple injuries to their business and property interests, and these injuries are sufficiently concrete to survive a motion to dismiss,” District Court Judge Charles Breyer wrote. Bosch also did not persuade Breyer that trying the case in the U.S. instead of Germany would be an unreasonable hardship to the company.

Correction

A story regarding DowDuPont’s EPDM operations that ran in the Oct. 30 issue of *Rubber & Plastics News* incorrectly reported that the firm offers Ziegler-Natta technology at its facilities in Freeport, Texas.

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TG develops new leaders

Toyoda Gosei Co. is developing the next generation of leaders within its global organization through a partnership with the University of Michigan. . . . **Page 4**

Beaver enters agreement

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Career fair a hit

The Rubber Division’s career fair, held at the International Elastomer Conference, gave companies an opportunity to scout new talent. . . . **Page 12**

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American Biltrite investing in Canada

By Kyle Brown
Rubber & Plastics News Staff

SHERBROOKE, Quebec—American Biltrite (Canada) Ltd. is working toward one of its largest investments in its 105-year history.

The company currently is finishing the first phase of a \$12 million investment in its Sherbrooke facility. The expansion plan, which should take about three years to complete all three phases, will add about 30 new employees, increasing the total number at the facility to 260, according to Frederic Guerin, vice president of sales and marketing. The total size of the facility will not change with the investment.

The investment is being done for development of an upcoming rubber flooring product line, which will be launched in the first quarter of 2018, Guerin said. The investment also involves additional equipment that will boost production capacity significantly, which can be used for both the new flooring product line as well as the company’s industrial rubber division.

“We’re planning for the future. We’re growing, and we need to invest in our capacity to support our growth and support our customers in what we do,” Guerin said.

Expanding with the rubber flooring product line will allow American Biltrite to be a bigger player in its current markets, he said.

“We are the leader in the market on the industrial rubber side. On the flooring side, we have very good products, but the market is so much bigger,” Guerin said. “We’re just a small player in the industry. Look at the direction we’re taking. We’ll definitely be a bigger player in the years to come.”

The company also opened a new stocking facility in June, located in Denver. The new facility strengthens the company’s distribution network, bringing the total to seven facilities in the U.S. and two in Canada. American Biltrite is able to stock products in appropriate locations to enable quick response to specific markets, Guerin said.

“We’ve been able to better serve our customers by having more stock delivered to their location, and it has proven to

be a good solution for the past few months,” he said. “The demand is there, and the speed of reaction is important in the distribution business.”

With the new warehouse in Denver, about 80-90 percent of orders placed with American Biltrite can be delivered in the next day throughout North America, said Paul Smith, business development manager.

“We’ve got pretty good coverage for common materials to be received the next day,” he said. “We have 26 independent sales agents that make up our sales force and who can probably get to a customer for assistance within 4-6 hours. Nobody else can do that in the industrial market for rubber sheet and specialty products.”

The Denver facility is developed for the mining industry, but the company isn’t opposed to expanding the location with other products if demand arises, Smith said.

Another way the company is looking toward the future is by reducing its carbon footprint, lowering its carbon dioxide emissions by 33 percent in the last year. The company has managed its footprint by adding some new, efficient equipment, and getting a better control of its processes, Guerin said.

American Biltrite also has reduced the quantity of product being sent to the landfill by a significant proportion, including reducing the amount of trim from the side of rolls. The company also has made some investment in changing its warehouse lighting to LED bulbs, which use energy more efficiently.

The company, which is ISO 14001 and ISO 9001 2015 certified, set goals to reduce its footprint in the last year, and both met and exceeded some of those goals, Guerin said.

“We want to still be a leader in the industry by using less energy and supporting our initiatives as well,” Guerin said. “Reaching our goal is one thing, but we’re setting new goals for the years to come. When you’re ISO 14001, it’s kind of in your DNA. You set new goals and you want to achieve them.”

“We’re doing it for ourselves, for our kids. It’s more a matter of being a good corporate citizen.”



Peter Huntsman (left) of Huntsman Corp. and Clariant’s Hariolf Kottmann during the May 22 merger announcement.

Huntsman, Clariant end merger

Plastics News Europe

THE WOODLANDS, Texas—Clariant International Ltd. and Huntsman Corp. mutually terminated their proposed “merger of equals” on Oct. 27. The decision was unanimously approved by the boards of directors of Clariant and Huntsman.

Clariant also confirmed that White Tale Holdings has increased its stake in the firm in excess of 20 percent. This follows earlier mandatory notifications by White Tale Holdings to the Swiss Stock Exchange regarding its holdings.

“We remain convinced that the proposed merger of equals as agreed to on May 21, 2017, would have been in the long-term best interests of all of our shareholders,” Peter R. Huntsman, president and CEO of Huntsman, and Clariant CEO Hariolf Kottmann said in a joint statement.

The firms added that given the continued accumulation of Clariant shares by activist investor White Tale Holdings and its opposition to the transaction, there is uncertainty as to whether Clariant will be able to secure the two-thirds shareholder approval required to approve the transaction under Swiss law.

“Under these circumstances and in light of the high level of disruption and uncertainty that has been created for both companies, we have jointly decided to terminate the merger agreement,” the statement said.

Clariant Chairman Rudolf Wehrli said in a statement that the firm regrets the missed opportunity for value creation, adding that company will now focus on further strengthening the company’s market position as a globally leading specialty chemicals company.

The proposed merger would have created a specialty chemicals and plastics company with annual sales of around \$13 billion.

Neither company is expected to pay a break fee, per the termination agreement. Clariant will avoid paying both the \$210 million deal breakage fee and the \$60 million EGM nonapproval fee as foreseen in the merger agreement.

“We viewed this merger of equals as an opportunity to accelerate our downstream growth and for two great companies to become even better together,” Peter Huntsman said. “However, it is not the only option for Huntsman to create real and lasting value.”

USW petitions U.S. Labor Dept. in Kumho case

WASHINGTON—The United Steelworkers union has formally asked the U.S. Department of Labor to convene the Labor Council under the U.S.-South Korea Free Trade Agreement (KORUS FTA) to consider the dispute between Kumho Tire U.S.A. and the USW at Kumho’s new plant in Macon, Ga.

The USW has accused Kumho of unfair labor practices in connection with the union organizing election at Macon Oct. 12-13. The union lost the election 164-136, and on Oct. 17 it filed charges with the National Labor Relations Board, asking it to set aside the results.

“Illegal tactics by the company have effectively limited the freedom of association ... and effective recognition of the right to collective bargaining ... for the U.S. workers at the Kumho plant,” stated the Nov. 6 letter from USW International President Leo W. Gerard to Labor Secretary Alexander Acosta.

Kumho fired union supporter Mario Smith on Oct. 17, and has threatened other workers at Macon with dismissal, according to Gerard.

“The severity of actions by management at Kumho and disregard for U.S. labor law raises serious questions over the Korean government’s commitment to the labor chapter of the KORUS FTA,” he said.

The Korean Development Bank, an entity of the South Korean government, holds a significant ownership stake in Kumho and considerable control over the tire maker’s affairs, according to Gerard.

The USW also is concerned about the imprisonment of Han Sang-gyun, president of the Korean Confederation for Trade Unions, for organizing peaceful demonstrations, Gerard said.

Developing the future

Toyoda Gosei's expansion strategies start to pay off

By Chris Sweeney
Rubber & Plastics News Staff

ANN ARBOR, Mich.—Toyoda Gosei Co. is preparing on multiple fronts for the changing automotive landscape.

The firm has expanded in many areas of its business during the last few years, including its rubber-related operations, but also is working on developing and acquiring the talent necessary to usher TG into the future.

Chairman Tadashi Arashima recently visited the University of Michigan's Ross School of Business, which has partnered with Toyoda Gosei to form a Global Executive Development Program. In its second year, the nine-month program works with senior executives from TG locations globally to help develop leadership talent.

"I think the experience of the University of Michigan combined with our desire to foster global executives and networking, because the company is getting so big," he said. "The key success factor for us is how we utilize our big production base. We're doing basically the same kinds of things in various places, but if they do these in totally different ways then there's no control. We need to coordinate and share best practices, and get rid of any bad practices if we have them. This really helps."

Future leaders, trends

The goal of the program is to further develop leaders who can bring out the best in their work force and continue to elevate TG as a leading global automotive supplier. The second session began in June and includes an expanded number of participants compared to the first.

Developing new talent is key for any industry, but especially so as big changes get closer to the horizon for automotive. Autonomous vehicles currently are being developed—though they are years away from being commercially available—but electric vehicles are here, and Arashima said those types of products bring new opportunities for suppliers like TG.

He said that as cars become more electrified, engine noise is greatly reduced, which enhances the need to reduce other noises throughout the cabin. The firm also is working to increase its presence in sensors by working together with other electronics companies to co-develop products.

"We want to reduce wind noise and so forth by coming up with better weatherstrips," Arashima said. "Overall, there's huge opportunity for us."

Lightweighting is another trend that will continue into the future, despite whatever changes may be on the horizon for U.S. regulations. The world still will have stringent standards in place, and as a global company TG will need to continue its efforts in reducing vehicle weight to improve fuel economy, Arashima said.

Global expansions

On the rubber front, Toyoda Gosei has invested significantly for weatherstrips in India, Mexico and in the U.S., the latter through its Meteor subsidiary—a Germany-based manufacturer with a sealing facility in Ohio. Arashima said the firm is starting to benefit from the moves, especially in India, where one of its key customers Suzuki holds more than a 40 percent market share.



Toyoda Gosei Chairman Tadashi Arashima (left) shares his experiences with University of Michigan students in its Global Executive Development Program.

The firm also invested \$11 million to add 62,000 square feet at its Fluid Systems' unit in Brighton, Mich., which focuses mainly on plastic tubing. And in South America it recently acquired full ownership of its Pecval Industria Co. joint venture, which produces interior and exterior parts.

The moves, especially those in the U.S. and Europe, have pushed TG toward more balance between its Toyota and non-Toyota business, which was one of Arashima's primary goals after being named president in 2011.

At that time, about 65 percent of the firm's business came from Toyota, and the non-Toyota business was relatively small. His goal was to increase the split to about 50-50.

Overall, he succeeded in increasing the non-Toyota volume by 81 percent and sales to non-Japanese OEMs jumped by 400 percent in that time. Business with Honda also more than doubled in volume.

Though he was successful in shifting TG's dependence on Toyota, there was one thing he didn't anticipate.

"We did a very good job in increasing the non-Toyota business," Arashima said. "But the one thing I couldn't forecast was that the Toyota business also increased by 44 percent. So the ratio isn't much different."

"The current trend is that the non-Toyota business is growing a bit faster than Toyota. Our market share of Toyota's business is quite high. We're already taking a big portion of Toyota's business."

Rahco invests about \$1 million in people, equipment

By Mike McNulty

Rubber & Plastics News Correspondent

DES PLAINES, Ill.—Rahco Rubber Inc. has grown steadily in 2017, and during the last eight months has poured about \$1 million into its operation to add machinery and make other moves to support the gains it has made.

Included in the company's investments are two high tech V710, generation G10 Rep presses; a 700-ton Benchmark 750 vertical injection Desma with matching 12 cavity double deck precision mold; a 110-ton hydraulic Wabash press; a Micro-Vu automated metrology system that automatically dimensionalizes and certifies components to sub-pixel accuracy; a 40-ton Wabash press with state-of-the-art control system for research and development efforts; and a high tech dry ice cleaning system, according to Dennis Askew, business development manager of the Des Plaines-based company.

Overall, the company has experienced about 7 percent growth, he said, and it has received ISO 9001:2015 certification and an extension of the company's ISO 9001:2008 certification.

A manufacturer of custom engineered precision molded rubber components, a sealing products provider and a formulator of advanced polymer materials, Rahco has been a family-owned business with the Anton family at the helm for 45 years.

The firm operates out of a 60,000-sq.-ft. plant in Des Plaines that features nearly 50 presses and compounding machines along with fully equipped research, development and quality control labs.

That's a big leap from Rahco's three employees and four machines housed in a 5,000-sq.-ft. facility when the company was launched in 1972.

Primary asset

Rahco's top officials cited various reasons for the firm's

success both recently and over the years, including product quality and on-time delivery.

But President Steve Anton and other officials cited the efforts of the company's hard working, experienced and dedicated 100-person work force—about 85 percent of whom are Hispanic—on the front lines as the prime asset of the company.

"A core reason for our success is our extended family, our employees," he said, while Jim Anton, vice president of operations, maintained that "our workers have gotten us here."

"It is impossible to measure their dedication, belief in making a positive impact and the craftsman-like pride they bring every day," Jim Anton said. The firm is very fortunate to have a culturally diverse workplace and tenured employees, added Jack Anton, vice president of sales and marketing.

Without a dedicated work force, Steve Anton said, "we as a company can't support our current customers or growth opportunities. Attendant to the molding rubber business is a significant amount of labor, skilled labor, focused labor. Our shop floor has talented and experienced workers who make it happen every day."

With that type of commitment, he said, the company has been able to gain significant ground in the markets it serves and make investments when needed to support the firm's continuous growth.

Rahco began hiring a number of Latino workers not long after it was launched, the company president said, and has been bringing them on board regularly since then. "It was very obvious in the work ethic and efforts displayed along with an eagerness to support our goals that they would benefit the company."

Thus far, it has worked out well for both the business and members of the work force, some of whom have been with the company for more than 30 years.

"Our family culture and that of the Latino work force are closely aligned," Anton said. "We are both passionate, hardworking and committed to doing our best."

Mutual admiration

Members of the work force feel the same about the company as the firm's top executives do about them.

"Rahco Rubber is a company that treats its employees like family," said Juan Diaz, a metrologist who has been with the firm for 18 years. "I can honestly say this based on my experience."

"I was hired in June 1998. One month later my father passed away. I informed my manager; less than 30 minutes later he called me back. He had spoken to the owners and was told to ask me if money was needed for funeral expenses. I was shocked; this was completely unheard of to me."

"Such a kind gesture and compassion toward a newcomer. From that moment on, I knew I was in good hands."

Juan Santillan, who's worked for the firm for 22 years and is presently the human resources and safety director, said the company supports people as they grow, promoting workers to operators and operators to supervisors or technicians. "The best reason to be here at Rahco Rubber is that the owners treat you with respect, because as they always say, we are family."

Ulbia Gallardo has worked for the firm for 33 years and, she said, the journey from Rahco's humble beginnings to today "has been incredible. I began as an inspector in the Final Inspection Department. In 2004, I was given the opportunity to work in the Quality Control Department where I am now the assistant supervisor."

She maintained that Rahco's "leadership, hard working men and women, and a combined dedication to quality and efficiency has helped this company become one of the finest manufacturers of molded rubber parts in the world."



Steve Anton



Diaz



Gallardo

Industry mixed on latest tax reform proposal

By Miles Moore

Rubber & Plastics News Staff

WASHINGTON—The tax reform proposal from the House Republican leadership is getting mixed reviews from tire industry and other business interests, with many groups offering both praise and condemnation depending on the specific provision.

Introduced Nov. 2, H.R. 1—the Tax Cuts and Jobs Act—includes many provisions designed to help business and industry. The legislation would reduce the number of individual income tax rates from seven to four, at 12, 25, 35 and 39.6 percent. It would increase the standard deduction and the child tax credit, but eliminate deductions for state and local sales taxes, student loans and large medical expenses.

The deduction for state and local property taxes would be capped at \$10,000, and the cap on the mortgage interest deduction for new home purchases would be halved, from \$1 million to \$500,000.

One of the most enthusiastic responses to H.R. 1 was from the American Trucking Associations, which wrote Congress Nov. 3 urging swift passage of the legislation.

“ATA recently hosted President Trump in Harrisburg, Pa., and strongly endorsed the tax reform framework that his administration worked to define with Congress,” the association said. “We are pleased to see this framework now embodied in the Tax Cuts and Jobs Act, to the benefit of workers, small businesses and families across the economic spectrum.”

The National Association of Manufacturers also said it was pleased with H.R. 1, which it called “a grand slam” for the U.S. economy.

“These tax cuts will make a real and positive difference for middle-class Americans, creating more wealth for higher wages, to reduce the cost of living and to increase savings for retirement and the future,” Jay Timmons, NAM president and CEO, said in a Nov. 2 statement.

Not surprisingly, the United Steelworkers union—along with its parent organization, the AFL-CIO—took the opposite view.

“This bill is a job killer,” the AFL-CIO said in a statement. “The GOP tax bill would give companies a huge tax break for outsourcing.”

A \$1.5 trillion cut in Medicaid and Medicare would only partially pay for the tax cuts proposed in H.R. 1, the union said. “But the GOP tax bill still won’t be paid for, so we can expect Republicans to demand more budget cuts that hurt working people in the future,” it said.

The National Federation of Independent Business also said it could not support the tax reform package in its current form.

The NFIB’s specific concern was the bill’s provisions for “pass-through” businesses—businesses that are taxed through individual owners rather than at the corporate level.

H.R. 1 would cap the pass-through tax rate at 25 percent, well below the current rate of 39.6 percent. However, the bill also contains provisions to discourage individuals from establishing themselves as small businesses to take advantage of the 25 percent rate. The NFIB said those provisions prevent legitimate small businesses from claiming that rate.

“This bill leaves too many small businesses behind,” Juanita Duggan, NFIB president and CEO, said in a Nov. 2

statement.

“Small business is the engine of the economy,” Duggan said. “We believe that tax reform should provide substantial relief to all small businesses, so they can re-invest their money, grow, and create jobs.”

In the Nov. 6 issue of its Weekly Legislative Update, the Tire Industry Association said it was still working through the text of the legislation.

TIA said it liked a good deal about the bill, such as estate tax repeal and continued interest deductions for small businesses. However, the association said it was concerned about other provisions, such as the pass-through provisions.

TIA was particularly concerned about the bill’s provision repealing the Work

Opportunity Tax Credit effective Jan. 1, 2018.

The WOTC allows businesses to deduct a portion of the first-year wages of employees hired from populations the federal government defines as underprivileged. TIA is a longtime supporter of the WOTC

TIA urged its members to email their congressional contacts to have the WOTC repeal provision removed from the bill. It included in the update a model letter TIA members could use as a guide.

“(WOTC repeal) is a sad and unwise blow to America’s families in deepest poverty,” the letter read.

The WOTC became law under the Reagan administration, and Congress

includes unemployed veterans and people with disabilities as WOTC target groups, according to the letter.

“With 1.6 million jobs a year, capped at an average cost of \$1,560 a year, WOTC is the only federal program of a scale sufficient to deal with the scope of the problem in a cost-effective way,” it said.

A spokesman for the U.S. Tire Manufacturers Association said its members are reviewing H.R. 1, but so far they have not found any issues of universal concern in the legislation

The House Ways and Means Committee began markup of H.R. 1 Nov. 6. At press time, the Senate Finance Committee was scheduled to issue its version of tax reform Nov. 9.

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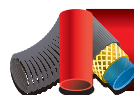
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Beaver, Mehler to partner in Europe

By Bruce Meyer

Rubber & Plastics News Staff

Beaver Manufacturing Co. Inc. and Mehler Engineered Products Group enjoyed a long courtship before finally entering into a cooperation agreement that will begin next year.

After 18 months of officials from the two firms getting to know each other and discussing a possible partnership, they have signed an agreement where Mehler will represent Beaver's rubber reinforcement products line in Europe beginning next year.

Mansfield, Ga.-based Beaver makes industrial fiber for the reinforcement of hose and mechanical rubber, particularly in automotive, industrial, and oil and gas applications. It specializes in performance-enhancing treatments for adhesion and improved processing on spiral knitting and braiding equipment. Effective Jan. 1, Mehler in the first phase of the cooperative agreement will take over the sales, service and distribution of Beaver Manufacturing products in Europe.

The partners then plan to extend the cooperation into local, customized development and manufacturing of Beaver's products by Mehler at a later date, but probably sometime in 2018, executives from the two firms said. Mehler, headquartered in Fulda, Germany, has six global facilities: three in Europe, and one each in North America, China and India.

The partnership was announced Oct. 24 by Michael Dubin, Beaver senior vice president and chief operating officer, and Joerg Czempisz, Mehler president and CEO, during the Hose Manufacturers Conference in Fairlawn, Ohio.

"As the demand for our products has increased in the European market, we began to look for the best way to meet our customer needs," Dubin said. "This partnership brings our products one step closer to the end user."

Czempisz said there is very little overlap between Beaver's and Mehler's product line. Beaver is a leading converter of hose yarn reinforcement, while Mehler is a top global converter of textile rubber reinforcement solutions. He said the partnership will expand the firm's portfolio of products it can offer to its European customers.

"This newly formed strategic partnership will position our company in offering RFL-, RF-free and isocyanate-based product solutions to our customers as a one-stop shop," Czempisz said. "Our unique position within the markets we are serving will enable us, as organiza-



RPN photo by Bruce Meyer

Michael Dubin (left), chief operating officer of Beaver Manufacturing, and Joerg Czempisz, CEO of Mehler Engineered Products, announced a partnership agreement during the Hose Manufacturers Conference.

tions, to get to the next level of customer care by further reducing time-to-market and total cost of ownership."

Due diligence

The two executives said the firms have been involved in discussions for the past 18 months that led up to the partnership announcement.

Czempisz said he was relatively new to the industry when the talks first began. "The people involved need to have a relationship with each other, especially when you are family businesses," he said. "You have to build a strong foundation so you can trust each other. Then you evaluate if there is a good business case to move forward, and that took a while."

He said it was determined that there would be a fit between the two organizations, with very little overlap. Mehler with its sales force based in Germany would be able to help expand Beaver's business in Europe because of the inroads it has with some of the larger customers in Europe.

Part of that includes utilizing Mehler's application and engineering expertise. "We are engineering products together with our customers, and that is something we intend to continue with Beaver," Czempisz said.

Besides getting to know each other, Beaver also had an existing partnership

in Europe with Cordus GmbH, part of Cordenka GmbH & Co. Dubin said Cordus had been an excellent partner, and will continue to supply rayon to his firm, as well as Mehler.

But Beaver made the decision that it wanted to take its European business to the next level, as Dubin said his firm currently gains about 80 percent of its revenues from North America and only roughly 5 percent in Europe.

"We made the decision to grow and we felt we needed to find a partner particularly for our European business who could help us with that growth, and that could be a good fit for us potentially globally," Dubin said.

Mehler also wanted to make sure the situation with Cordus was handled properly, as it also does some business with the group, Czempisz said. "We are a conservative German company and (Beaver) is a conservative American company, and it's very important that we are not doing this kind of thing against current partners."

Dubin said the transition plan was put in place that will enable the partnership between Beaver and Mehler to begin Jan. 1.

Leading to manufacturing

As the two firms got to know each other, they also got to the point where they shared each other's capabilities at their

respective facilities.

Dubin said what they found was that Beaver and Mehler shared a similar perspective on manufacturing. That helped make Beaver more comfortable about actually having Mehler manufacture its goods.

Czempisz said the firms have a similar view on lean manufacturing and building those processes to help customers. "Basically we are an engineering company with a core aspect in converting as well as in developing together with customers," he said.

Beaver has gone through some general technical testing, and there may be the need for some small modifications, but Dubin said his firm won't have to put its treating units in Mehler's facilities.

"We have the technical capabilities already there; it's basically fine-tuning," Czempisz said.

This was one of key determining factors in convincing Beaver that Mehler would be the correct partner for it to reach its goals in Europe.

"With wanting to grow and the interest in our products—particularly from a technical perspective—increasing in a short period of time, we needed a partner that could take on and support us with those activities," Dubin said.

And in the end, he said Beaver believed it could only grow so much by exporting, adding, "if people are really going to buy into what you're doing, you have to produce there."

From a market perspective, Czempisz said it takes a long time to acquire a new customer, and Mehler will quicken the process immensely for Beaver. "Within our organization we have key account management, which means we have an engineer and a commercial person who are servicing these kinds of customers exclusively," he said.

In addition, as the innovation cycles are getting faster, companies like Mehler need to be "willing to cannibalize their own existing portfolio to continuously grow and continuously be the right partner in speeding up these cycles," according to Czempisz. "Innovation means the time and quality, plus the willingness to take something away by adding something new."

The two executives said the partnership eventually could expand beyond Europe, but it's important to be successful there first.

"We want to get up and running the full scope of the partnership in Europe, and then see what the next steps will be," Dubin said.

Consumer engagement could lead to market growth

By Kyle Brown

Rubber & Plastics News Staff

The economy is showing signs of more engaged consumers, but a gradual softening in the consumption of automobiles could be cause to worry, Roger Tutterow, professor of economics at Kennesaw State, said at the Hose Manufacturers Conference in Fairlawn, Ohio, Oct. 24-25.

Consumer confidence has been gradually rebuilding from its low in November 2008, according to the University of Michigan's Index of Consumer Sentiment, Tutterow said. By the fall of 2014, it reached between 85 and 95 points. Last year's election caused a jump on that scale of 11 points from October to January.

"The good news is that surge in sentiment gave us a pop in terms of retail sales," Tutterow said. "We reached a point where we had retail sales growth of 5.5 percent for the 12-month period ending late last year."

Though the Index of Consumer Sentiment did jump after the election, that boost didn't carry equally throughout

the country. In the metropolitan Atlanta counties where Tutterow collects similar data to the index, the index didn't budge after the election, he said.

"It dawned on me that Clinton carried eight of the 11 counties in the survey. Trump carried three. It made me wonder if, in general, consumer sentiment in the U.S. is connected with political identity," he said.

American households have been bifurcated in terms of their near-term view of the economy, heavily driven by political affiliation, he said.

"As we work our way through 2017, this gap has been narrowing gradually. And I expect that as we reach a date of reckoning about what kinds of campaign statements can be actually morphed into policy, we'll see even greater convergence in terms of how various individuals see the economy versus their political affiliation," Tutterow said.

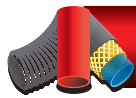
In automobile sales, despite a big jump after the Cash for Clunkers program and steady light truck sales as gas

See **Consumer**, page 7



RPN photo by Kyle Brown

Roger Tutterow presents economic data at the Hose Manufacturers Conference in Fairlawn, Ohio.



Consumer

Continued from page 6

prices drop, the consumption of automobiles has been gradually softening in the U.S., he said.

One of two explanations for that slowdown is pent-up demand after the recent recession.

"We as economists have recognized for a long time that every time the economy goes through a soft patch, whether it's a full-blown recession or a pullback in job creation, people postpone purchases of big-ticket items, particularly durable goods," he said. "It's quite likely that we had a surge of consumption between 2010 and 2014 associated with satisfying some pent-up demand that was created between '07 and '10."

The other explanation is "we're seeing a pullback because the consumers are getting tired," he said. "When consumers get tired, big ticket items show it first. So there's some possibility there."

But finding those explanations got much tougher after Hurricanes Harvey and Irma came through, he said.

"It's very interesting. We're now going to have a period of anywhere from four to eight months where we're going to have elevated sales patterns trying to replace automobiles that were destroyed," he said.

Market recovery

Another metric to watch is the Conference Board Leading Economic Index, which watches statistics such as building permits and new orders for consumer goods to forecast economic activity, he said. The American economy has never had a recession not predated by the LEI going negative, typically by more than 1 percent.

The LEI increased every month in 2014 and 2015, but 2016 "got a little dicey," he said. Through April 2016, the data showed the LEI down by 0.1 percent, not enough to look for recession, but enough to raise the possibility of recession in the near-term. The most recent data show the LEI up at 2.6 percent, though there was a drop in September caused by the hurricanes.

"The point is, everything in the economic data today says that while we may be frustrated with the pace of economic growth, while we may not hit that 3.5 GDP that everyone is cheering for, the odds of full-blown recession here in the fourth quarter or in the first several quarters of 2018 still remain relatively low," he said.

Also related is the recovery of the job market, he said. Generally, the states that lost the most jobs during the recession had heavy exposure to residential real estate or durable goods manufacturing, such as Ohio, Michigan, Illinois and Indiana. Among the states that held up the best were those with connections to energy extraction, refining and distributing, such as North Dakota and Alaska.

Compared to December 2007, about 40 states currently have an increased net change in jobs by a statistically significant amount, with places like North Dakota and Texas at the top, he said.

The falling price of oil has affected that growth, as some energy-industry states have lost jobs in the last 12 months, leading off with Wyoming and including others such as South Dakota, Alaska, Kansas, Oklahoma and Louisiana. The price of oil has recovered to about \$45-\$55 a barrel in the near term, Tutterow said.

"We're at ranges where you can make some money in West Texas and North Dakota pumping in a way where you couldn't at \$30 a barrel," he said. "But we're not at levels that justify the incredible infrastructure and investment."

While rig counts are rising again, the industry isn't seeing the same surge in the energy sector that existed in 2010-12, he said.

"We have an administration now that's going to encourage investment and infrastructure associated with the energy sector, so some of that should be positive news to folks in this room," Tutterow said.

Other change is showing up for non-residential markets in three main areas: industrial, lodging and office, he said.

In industrial, so much industrial space was built in the early recovery of the recession that less is being built today than in the past two years, he said.

"We're pulling back a little bit in new

industrial space," Tutterow said.

In lodging, growth has moved through two phases already as occupancy rates increase, but should show a moderate downturn as new construction in lodging-oriented projects eases off, he said. More often, changes in the lodging industry will be changes in control of already built properties.

The office market is starting to move into a new phase of growth, as commercial groups have started to work on purely spec builds, he said. Additionally, many modern offices are shared spaces, with employees needing less space and smart developers building to accommodate.

The housing market also is continuing

to recover, but is still down by about 40 percent from its peak.

"There's not much of a story on home prices yet, but for the first time in this economic recovery, I'm hearing the word 'affordability' in the last two quarters," he said. "Home prices are back nationwide above where they were at the peak of the housing market."

The manufacturing market stands as a key sector to the American economy, pays the highest compensative wages and has the biggest spillover in multiplier effects in regional economies, he said.

"I am an unapologetic defender of those who produce products for a living," Tutterow said.

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Opinion

Keeping up isn't enough; firms must be ahead of change

It's clearly no secret that change will be the overriding megatrend in the automotive industry. While it's a bit less certain at what rate such technologies as electric vehicles and autonomous driving will emerge, the suppliers that are proactive in keeping ahead of the curve will be best served.

Cooper Standard and Toyoda Gosei represent two companies that aren't sitting around waiting for the industry to pass them by. Both are diligently working on such issues as the continued need for lightweighting in vehicles and the need to abate non-engine noise in electric vehicles.

Both also say that whether the Trump administration does ease up on regulations in the U.S., lightweighting will continue to be a factor, as the U.S. represents only 14 percent of the global market.

Both of the automotive suppliers are using a variety of methods to keep up with the industry's landscape.

TG has partnered with the University of Michigan's Ross School of Business to form a Global Executive Development Program. The nine-month program, in its second year, works with senior executives from TG worldwide to develop leadership talent.

Bringing along talent is especially important as these new changes begin to take shape in automotive, as a fresh perspective can help suppliers find new solutions that may not be apparent to those currently in leadership positions.

Innovation is the cornerstone Cooper Standard is using as the keystone to its plan to meet the quickly changing needs of its automotive customers. It just opened a new



global technology center in Michigan that it says will offer solutions along the whole chain of its business: from materials, tooling and development, to production and product validation.

By having this capability all in one place—one of three such regional technical centers Cooper Standard has around the world—will enable the firm to speed up its technical innovations. It will look for ideas from production level employees on up using its i3 program, representing imagine, initiate and innovate.

Cooper Standard already is rolling out some new technology. Its Fortrex elastomeric material—combining the best of EPDM and TPVs—has brought 30 percent weight savings compared to EPDM in sealing systems and doesn't have the compression set problems common with TPVs.

Its goals are lofty. Cooper Standard already has sold \$385 million in what it calls “innovation orders” through the first half of 2017, and targets having \$1 billion in innovation-related revenue by 2025.

So as the future unfolds for automotive and other industries, it will be interesting to see what else rubber product makers such as these two develop to remain relevant in a changing world.

VIEWPOINT

Time to get social

By Bruce Meyer

Odds are you're reading this column either in our print edition or online at our website, www.rubbernews.com. Those continue to be the most common means by which our readers connect with *Rubber & Plastics News* content.

But I want to make sure you're aware that our publication also has an active presence on social media. We use Facebook, Twitter and LinkedIn frequently as a way to keep you informed of what's going on in the rubber industry. You'll find links to stories posted on our website, of course, but you'll also have access to videos and photos from industry events such as the ACS Rubber Division's recent International Elastomer Conference in Cleveland.

It was a video at the Rubber Expo portion of the IEC, in fact, that went our version of “viral” on Facebook. Erin Pustay Beaven, our online content editor, shot a Facebook Live video at the Cold Jet booth demonstrating its i3 MicroClean machine that has exceeded more than 1,000 views. I'll credit Cold Jet's Steve Wilson for being a



natural “on-air talent” in helping boost the video's reach.

Our Facebook page has more than 1,100 followers and is steadily growing. Our Twitter account @RubberNews has nearly 4,200 followers. Now that may not sound like a lot compared with the massive following of celebrities and President Trump, but only about 4 percent of Twitter accounts have more than 1,000. On LinkedIn, the RubberNews.com group has a more modest 590 members, but we are looking to be more active in that format.

Personally, I typically use Facebook more to keep up with friends and family—not to mention post photos of my grandsons—and use Twitter and LinkedIn for professional activities. I like Twitter not only for Tweeting out news and photos, but also for getting story tips from the many rubber companies with active accounts. And I have more people telling me at industry gatherings they're following me on Twitter.

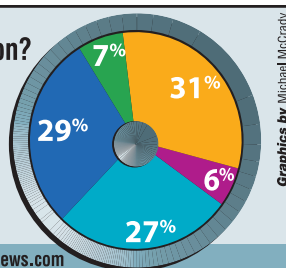
So while you may be enjoying *RPN* in its more traditional formats, I invite you to “get social” with us. And please drop me a line and let me know what you think.

Meyer is editor of Rubber & Plastics News. He can be reached at bmeyer@crain.com. Follow him on Twitter @bmeyerRPN.

WEB POLL RESULTS

Q: What Social Media platforms are you active on?

- Facebook
- Twitter
- LinkedIn
- Instagram
- I'm not very social.



Total Votes: 141 Poll Date: Oct. 26 - Nov. 9. Vote in new poll at www.rubbernews.com

QUOTE OF THE WEEK

“We're at ranges where you can make some money in West Texas and North Dakota pumping in a way where you couldn't at \$30 a barrel.”

—Roger Tutterow, professor of economics at Kenesaw State, on the higher price for oil.

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From The Web

Mearthane expands reach with Elmco Tool addition

CRANSTON, R.I.—Mearthane Products Corp., a developer and manufacturer of customized polyurethane components, completed the acquisition of Elmco Tool Inc., a provider of precision computer numerical control and machining services based in Bristol, R.I.

Elmco operates as a key supplier of mission-critical components in defense applications, which builds on MPC's track record in those markets, said Pete Kaczmarek, president and CEO of MPC in a statement. The company's joint capabilities will bring a broader range of solutions for customers while positioning the company for diversification.

"For example, Elmco's rapid and sophisticated tool design and machining capability will allow MPC to address our customers' needs quickly and flexibly, especially during prototyping and early stage production," he said.

MPC will continue Elmco's operations at its Bristol facility and will integrate key administrative and functional roles to improve operations at both facilities.

Trelleborg adds heavy tire servicing company

DUISBURG, Germany—Trelleborg Wheel Systems has acquired White Baumaschinenreifen GmbH, a German company specializing in servicing, fitting and repair of pneumatic and solid tires for construction vehicles.

The company, part of Swedish Trelleborg A.B., said on Nov. 2 that the acquisition would further strengthen its European distribution network for tires for materials handling and construction vehicles.

White is headquartered in Duisburg, Germany, with sales of \$10.6 million in 2016.

Trelleborg added that the bolt-on acquisition is part of its strategy to strengthen its positions in attractive market segments.

"The acquisition gives us the opportunity to expand our tire service concept for

materials handling and construction vehicles, while also allowing us to enhance our sales of service and distribution in Europe," Paolo Pompei, Trelleborg Wheel Systems president, said in a statement.

The deal, added Pompei, strengthens the TWS supply chain, from manufacturing to service of tires.

Continental enhances services for industrial hose

FAIRLAWN, Ohio—Continental A.G. acquired Custom Machining Services Inc., expanding its range of services for the industrial hose industry, according

to a Continental release.

The acquisition allows Continental to add assembly equipment to its portfolio to the mutual benefit of customers and distributor partners, said Andreas Gerstenberger, Continental's head of industrial fluid solutions business.

The Valparaiso, Ind.-based company has been in business since 1979, producing hose assembly equipment, crimpers and dies since 1984. Terms of the acquisition were not disclosed.

CMS employs 50 and is known for its CustomCrimp and ValPower products, manufactured in a 46,000-sq.-ft. plant in Valparaiso. All of the component

parts that are used in the product, including the pumps and cylinders, are produced on computer numerically controlled equipment.

HF Mixing Group acquires Mesabi Control Engineering

FREUDENBERG, Germany—HF Mixing Group has acquired Mesabi Control Engineering.

Mesabi's management and engineering team will remain in place, Mesabi said in a news release. The firm added that joining HF will bring benefits for both companies and their customers because systems automation is one of the fastest growing segments in the rubber compounding industry.

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Wacky World of
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Blog highlights exploding pumpkins and earguards

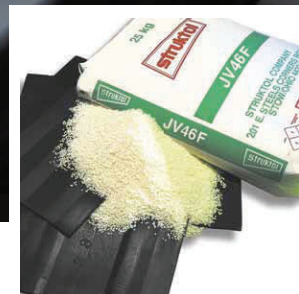
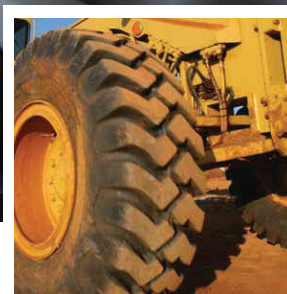
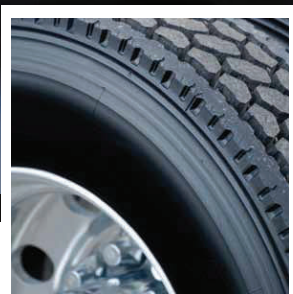
The world of rubber is vast, and sometimes a little crazy.

Every Wednesday, *Rubber and Plastics News* takes a dive into the Wacky World of Rubber, a blog focusing on off-the-wall topics in the rubber industry.

Last week, *RPN* News Editor Chris Sweeney looked at a new earguard designed to help prevent cauliflower ear in rugby and other sports with high impact—like wrestling or hockey. The silicone product already has been a hit in certain niche areas and is looking to expand further into other areas, including martial arts.

And in the aftermath of Halloween, Reporter Kyle Brown offered a clever way to get rid of old pumpkins: by making them explode. Apparently, all you need is a lot of rubber bands, some protective glasses and patience.

Find these and future blog entries at www.rubbernews.com/blogs. Feel free to reach out to Online Content Editor Erin Pustay Beaven (ebeaven@crain.com) or Sweeney (csweeney@crain.com) if you have an off-the-wall rubber topic you'd like to see *RPN* explore further.



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SPECIAL REPORT

Belting

Fenner releases new industrial belt

By Kyle Brown

Rubber & Plastics News Staff

PITTSBURGH—Fenner Dunlop P.L.C.'s Engineered Conveyor Solutions division is pushing forward with a new product designed to widen its reach into the industrial use market.

Patriot X is a fabric belt with single-unit construction meant to be used for light-medium duty applications. The belt, which debuted in the market in September, marks an opportunity for Fenner to provide a cost-effective line of belting to compete with imports, said Scott Frenz, senior vice president of sales and marketing for the Americas division.

"Typically, what we see for most of the importers is an offering for somewhat lower-end applications in the marketplace. Not something you're going to put under a primary crusher on a rock quarry," he said.

Fenner saw the highest amount of penetration from imports in light to medium duty applications, in the aggregate plant as a tertiary belt, the belts running light sand and gravel, light duty wood products or cement, Frenz said.

"We've seen some of that market go to imports over the years, and we wanted to come up with a solution to compete in that market with a North American-made product," he said.

The Patriot X currently is being produced in Fenner's Port Clinton, Ohio, fa-



Frenz



The new Patriot X belt features a single-unit, dual-crimp warp design.

cility, but also could be produced in the company's facility in Bracebridge, Ontario, Frenz said.

Fenner is continuing to produce high-end, heavy duty belts such as its UsFlex, NovaCore and PSR brand names, but is trying to gain back some of the market share in the light and medium duty market with a North American-made product that's a little different, he said.

"It's really similar to how we've designed some of our higher duty application products," Frenz said. "It's what we call a single-unit construction. We don't even like to call it a ply, because it isn't really a ply. It's a single unit of fabric."

The Patriot X is made with a "dual-crimp warp design," Frenz said, that allows the belt to be thinner and lighter, but perform significantly better than comparable two- or three-ply belts in terms of rip, tear and impact resistance.

"Not only is it a North American produced product that can compete from a cost standpoint with those belts, it is different in that its design is different, and its con-

struction is different than really anything else that's out there," Frenz said.

The Patriot X currently is being launched through the company's existing distribution channel, its Total Conveyor Solutions Distributors.

The belt is a kind of new generation of Fenner's original Patriot line of about two years ago, which was a two-ply and three-ply belt that made some headway in the market, but didn't provide the market penetration Fenner was after, Frenz said.

"It did well, but we felt like we could really change the game by coming out with this single-unit dual crimp warp construction," he said.

Restructuring

The Patriot X is the result of Fenner's research and development resources over the last year, and stands to be the main product from Fenner in the next year or so, Frenz said.

It comes as the company is recovering from the significant downturn in the coal mining market when the company saw restructuring and the partial closing of its Port Clinton facility, and a cut to its work force of about 20 percent in 2016.

Prior to that, the Americas operations work force overall had been trimmed by 11 percent in 2015, and consolidated its belting divisions with a Northern Hemisphere and Southern Hemisphere/Asia-Pacific split. At the time, Cassandra Pan, former president of the North American operation and ECS Americas, took early retirement. Managing Director Edwin Have came on board to take her place.

"At Port Clinton, we did close a portion of that facility, but it was some very old and outdated equipment. It was still capable of producing good belts, but it was not the most efficient line in our system," Frenz said. "We did close a portion of one plant, and we did have some contraction in the number of employees in the organization, like many companies that were dealing with the downturn in the coal industry. But we're proud to say we did not close any complete facilities."

The 2016 restructuring of ECS Americas meant several shifts for the company's goals, including an increased focus on industrial belt markets, a refocused presence in coal to reflect deterioration in the industry and other measures to address overhead and non-belt manufacturing activities, according to a Fenner company overview report from July 2017.

Bringing the focus back to the industrial belt market as the coal market begins to recover is part of the reason for

the Patriot X line, Frenz said.

"We've seen the coal business start to bounce back to an extent. It's not to where it was three to five years ago, but it's steadily coming back," Frenz said. "We feel like the industrial markets were fairly steady even in the challenging times in the last couple years."

"We really did want to have a product for every portion of (the industrial) marketplace, from the toughest of the tough applications, all the way down to the lighter duty and medium duty applications. That's really what this was a response to, really doubling down on the industrial markets and making sure we had a strong position from top to bottom in that marketplace."

As the coal market begins to rebound and the industrial market continues to grow, Fenner is better positioned to cap-

"We're expanding in areas where we believe it will impact our business for the positive."

Scott Frenz

ture significant growth after its restructuring, Frenz said.

Another part of the company's restructuring included moving some responsibilities and roles out of its plants, particularly in manufacturing, to its Pittsburgh headquarters to centralize them. That move brought more efficiency for Fenner, Frenz said. The company has not recovered its employee total from before the restructuring, and might not going forward as efficiencies continue to show up.

"Will we ever be as large as we were five years ago? Probably not," Frenz said. "I think we recognized that we can run our business a bit more efficiently and effectively than before the downturn."

But as opportunities grow, Fenner is adding some additional roles, including three new sales resources in the western part of North America, he said.

"We're expanding in areas where we believe it will impact our business for the positive," Frenz said. "And we are staying firm in some areas where we feel we've potentially gained some efficiencies in the restructuring of our business, and will continue to benefit from the leanness we took as an approach a few years ago."

Currently, ECS employs 2,072 globally, according to its annual report.

For Fenner, the market looks "cautiously optimistic," Frenz said. Though the coal mining opportunities aren't what they were five years ago, they're likely to be better this year than last year, and the industrial and bulk markets likely will remain steady.

"There's always going to be some portions of the market that struggle when others perform well, but right now, it seems that most of the markets we play in are either doing moderately well to very well," Frenz said.

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SPECIAL REPORT — Belting

Semperit to close French plant

By Mike McNulty

Rubber & Plastics News Correspondent

VIENNA, Austria—Semperit A.G. Holding's Sempertrans business is moving ahead with plans to close its belting plant in Argenteuil, France, and consolidating the firm's European belt production operation at its large complex in Poland.

Semperit is well-prepared for the consolidation. The Belchatow, Poland, production facility has been expanding its capacity with the addition of new equipment, according to a company spokeswoman. The company invested heavily with the aim of doubling the site's production capacity in two stages, she said.

Since September 2016, capacity at the Belchatow factory—Sempertrans' largest conveyor belt manufacturing complex—has grown by about 50 percent, the spokeswoman said, with the addition of new steel and textile presses and another calender.

Those additions are part of phase one of the project, which is expected to be completed by 2018. The spokeswoman added that belts for the North American market primarily are produced at the Belchatow plant.

The stage was set for the move of production from the Argenteuil facility to the factory in Belchatow on Oct. 13 when management of subsidiary Sempertrans France Belting Technology S.A.S. signed a

social plan agreement with representatives of the French employees affected by the Argenteuil factory closure.

Management and the employees had been negotiating since the end of June. About 64 jobs will be impacted by the shutdown.

Once agreement was reached, the pact was submitted to French labor authorities for approval, which was expected on Nov. 10, the spokeswoman said. Results were not available at press time.

Under French law, a social plan for employees is required when a facility is closed. In this case, social measures for employees include, among other things, outplacement assistance, redeployment leave and training, she said.

Sempertrans will move into the implementation stage of the consolidation plan once it gets the go-ahead from French officials. That will include halting production and closing the Argenteuil factory as well as rolling out the employees' social measures, the spokeswoman said.

She said Sempertrans had not determined how long it will take to complete the shutdown of the French facility, but the company currently is setting up a project team to handle all closure activities. That includes making a determination on what to do with the belt production property, which is owned by the firm.

At this point, the spokeswoman added,

no decision has been made on the transfer of machinery at the site elsewhere.

Vienna-headquartered Semperit began reviewing ways to improve profitability within its group of companies in April. Sempertrans, like most global heavy-weight conveyor belt makers, still is dealing with the impact of a poor mining climate, resulting in dwindling sales over the last few years. The volatility of raw material prices also has caused difficulties in the segment.

Semperit's management board, with the consent of its supervisory board, launched what another spokeswoman said was a thorough analysis of potential alternatives to carry out cost-cutting and restructuring measures at the French production site.

Other Sempertrans plants were not expected to be impacted by the cost-saving moves, she said, other than the facility in Poland, which will continue to expand.

In addition to the plant in Poland, Sempertrans operates a textile belt production site in Roha, India, and a textile and steel belt factory in Taierzhuang, China.

Firm appoints three officers

Semperit, in a separate move, has named three people to new positions within the group, including Markus Keller, as the new general manager of its Semper-



The Sempertrans management team includes, from left: Franz-Otto Geesmann, head of operations; Markus Keller, head of segment; and Peter Klaus, head of commercial.

trans unit.

Keller brings 25 years of industry experience and served as head of technical and operations of Sempertrans since 2011. He began serving in his new position in April.

The firm also appointed Franz-Otto Geesmann as head of operations for its Sempertrans unit and Peter Klaus as head of commercial within Sempertrans. Geesmann previously spent time with companies like RWE, Thyssenkrupp and FLSmidth, while Klaus joins the firm after spending 22 years with ContiTech A.G. and three years with Fenner Dunlop.

Beltservice to distribute Movex products in U.S.

By Kyle Brown

Rubber & Plastics News Staff

ST. LOUIS—Beltservice Corp. has partnered with Movex S.p.A. to distribute Movex products in the U.S. and Canada, including modular belting, plastic and steel conveying chains, and conveyor components.

Beltservice, which is a fabricator of custom conveyor belting based in St. Louis, will promote, support and expand Movex products in the U.S. and Canada. Beltservice only sells to distributors, developing a kind of wholesaler model, Beltservice President Ken Engelsmann said.



Engelsmann

"We had heard that Movex was an Italian company that had established a presence in the U.S. and was looking for a distribution partner," he said. "They felt we would be a good fit for them to get their products out to a broad base of distributors."

Beltservice will include Movex products with its distributors and original equipment manufacturer partners, as well as provide service and technical experience. Movex products will be kept in inventory at 10 facilities, with locations on the East and West Coasts, in Texas, and in Canada and Mexico. The products will be supported by a staff of 24 direct sales representatives, product and technical specialists, and customer service staff. As the partnership develops and Beltservice gets a better sense of U.S. demand, inventory will be shifted to the most efficient locations to fit individual markets, Engelsmann said.

Movex, which was founded by Sergio

Marsetti, is located in Telgate, Italy, and specializes in the beverage market. It distributes its products globally, including locations in China, Brazil and Mexico.

Talks began in January 2017, and the partnership was official in June, Engelsmann said.

"It came together very quickly because I think we both found in the other what we'd been looking for," he said. "We'd been looking for someone who really knew that market, and the chain market, and guiding rails and everything. They were looking for someone to plug into here that would give them access and a sales force."

Before the partnership was created, Movex had established a presence in the U.S. through a facility in Lynchburg, Va., to begin to build beverage industry relationships stateside, Engelsmann said.

Beltservice currently is training its sales force on the Movex products, he said.

"Getting these products is certainly an exciting thing for Beltservice," Engelsmann said. "We're very much in full force behind seeing this partnership be a success, and it is a high quality product done by Movex."



Movex, based in Telgate, Italy, specializes in the beverage market.

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Rubber firms see job candidates at career fair

By Miles Moore

Rubber & Plastics News Staff

“Consultative Sales Engineer—Custom Rubber Products,” read the flyer from Tingley Park, Ill.-based Aero Rubber Co. Inc.

“Prefer at least five years of successful rubber sales experience (molded, extruded and fabricated parts),” it said. “Inside sales 95 percent, outside 5 percent or less.”

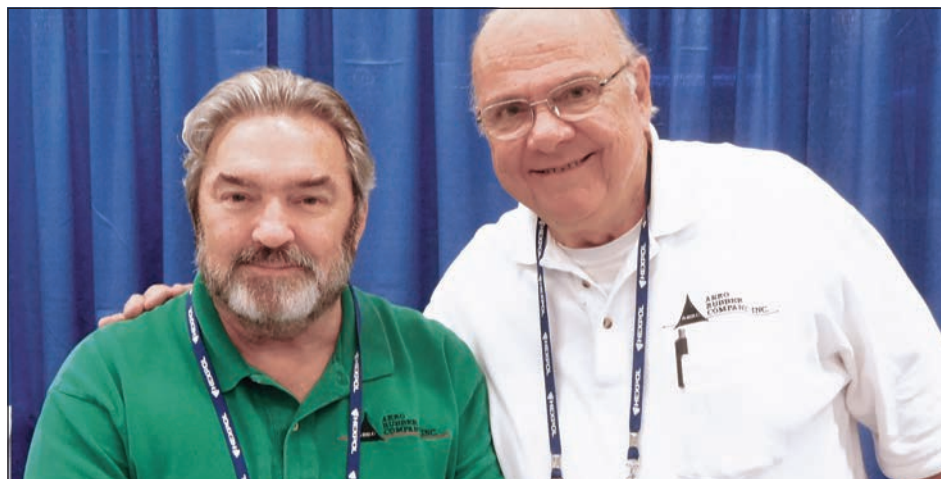
Aero Rubber said it preferred applicants with knowledge in the details of industrial rubber sales, materials selection and application engineering, as well as quality system experience. It offered top salary and benefits, and—in all caps—a comprehensive relocation package.

Altogether, it sounds like a great opportunity for an ambitious sales engineer in the rubber industry. However, finding the right person for the job has been difficult.

“This is the same ad we’ve been running in your publication for months,” Aero Rubber CEO John Kasman said.

Kasman was with John Hanley, application sales manager at Aero Rubber, to man the company’s booth at the Career Fair held Oct. 12 in Cleveland, on the last day of the International Elastomer Conference.

Aero Rubber manufactures a broad range of custom rubber parts, including molded, extruded and fabricated goods; sheeting, rolls and matting; tubing and cord; gaskets and seals; and custom hose and sleeves.



RPN photos by Miles Moore

John Hanley (left), an applications sales manager for Aero Rubber Co., and Aero Rubber CEO John Kasman staff the firm’s booth at the Career Fair.

The company’s most important product, however, is rubber bands—an enormous variety including clear bands, pallet bands, stationery bands and all-weather bands. One of its biggest specialties is silicone and polyisoprene rubber bands imprinted with logos, slogans and mottos for advertising and promotional purposes.

“Our slogan is, ‘Not Your Grandfather’s Rubber Band,’” Kasman said. “We can do any color, inside or outside, with bar codes and logos. We’re also the only manufacturer in the U.S. that makes pallet bands. We

sold our first pallet band in 1974.”

Aero Rubber was seeking a salesperson who knows the industry and knows about rubber, according to Kasman and Hanley. The alternative, which they don’t want, is to hire a salesman they have to train to the industry, they said.

“It used to be Mohammed going to the mountain,” Hanley said. “Now it’s the opposite.”

Aero Rubber was one of 10 companies with recruiting booths at the IEC Career Fair. They varied widely in size, in product range and in the number and types of employees they were trying to recruit.

Hankook Tire America Corp.’s Technical Center in Uniontown, Ohio, was seeking tire development engineers, rubber chemists and tire test engineers, according

to Alan Shirley, a materials engineer at Hankook in Uniontown.

“We hope to hire half a dozen in the next six to 12 months,” Shirley said. “We have a staff of 55 in Uniontown, and we hope to expand aggressively to support the new tire plant in Tennessee.”

The competition is strong for experienced engineers at Hankook, according to Shirley.

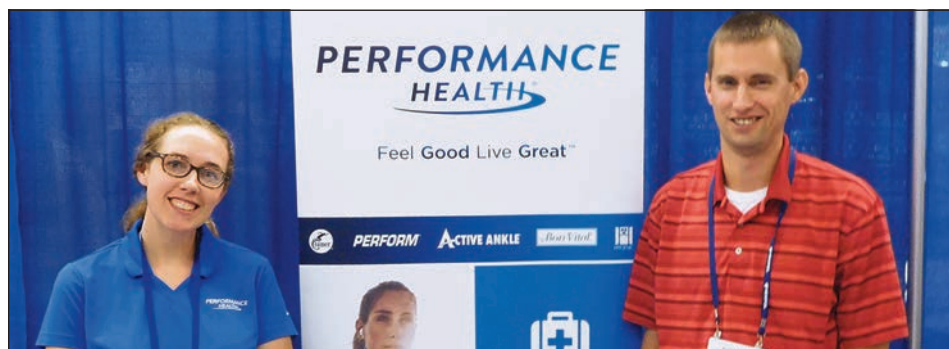
“The specific skills we require take years to develop, and there are no college courses for them,” he said. “This is work that prepares someone to develop a tire.”

Hankook is a large and growing organization—currently sixth among world tire manufacturers, with plans to rise higher on the list, according to Shirley. The plant in Tennessee opens up the possibility of more original equipment business in the U.S., he said.

Performance Health Technologies Inc., a manufacturer of polymeric clinical and rehab products, was at the Career Fair looking for a product development engineer at its Akron office; a process engineer for its Cedarbury, Wis., facility; and a marketing associate for its Performance Health Academy, which educates its customers on health issues in general and the company’s products in particular.

It also sought an associate product manager for specialty products, according to Jessica Wood, a human resources generalist for the company. Performance Health—formerly Hygenic Corp.—is looking especially for someone with experience in tourniquet strap technology, she said.

“It’s hard to find people in the medical device field,” Wood said. “FDA-certified engineers are few and far between.”



Jessica Wood, HR generalist at Performance Health Technologies, and Brandon Lands, the firm’s HR manager, were looking for candidates to fill three positions.

Rhein Chemie ready to expand additives presence

By Miles Moore

Rubber & Plastics News Staff

With its recent acquisition of Chemtura Corp., Lanxess A.G. is gearing up its Rhein Chemie business unit to lead the company’s expansion in specialty additives, according to a top Rhein Chemie executive.

“This is expected to be the best year for Lanxess in its history,”

Rogério Ibanhez, head of sales in the Americas for the Rhein Chemie business unit, said at the International Elastomer Conference in Cleveland Oct. 9-12.

Officially completed April 21, Lanxess’ purchase of Chemtura—one of the world’s leading suppliers of flame retardant and lubricant additives—was a major step forward for the Cologne-based specialty chemicals giant, according to Ibanhez.

“The Chemtura acquisition was a chance for us to grow in the Americas and spread the footprint of the company globally,” he said.

With the Chemtura acquisition, Rhein Chemie restructured into the Rubber Additive Business and Colorant Additive Business units.

“This was a big change, allowing Lanxess to change its focus from chemicals to specialty additives,” Ibanhez said.

The four pillars of Lanxess are advanced intermediates, performance chemicals, high performance materials

and performance additives, according to Ibanhez. The acquisition of Chemtura created the fourth pillar, he said.

“The focus for Lanxess from now on will be future new acquisitions and new strategies for our global footprint,” he said.

The Rhein Chemie business has global annual sales of \$463 million, 25 percent of which are in the Americas, including South America as well as Canada, Mexico and the U.S., according to Ibanhez.

Digitalization in the form of Industry 4.0 is something Rhein Chemie is assessing as part of its future strategy, he said.

Rhein Chemie has 11 production sites—two in the U.S. (Chardon, Ohio, and Little Rock, Ark.), three in Latin America, three in Asia and three in Germany, Ibanhez said.

“We can support all customers worldwide with our global production footprint,” he said. “We produce all our additives in every region. We can switch production from plant to plant, depending on demand and customers’ requests.”

Rhein Chemie is expanding production in three or four sites, most notably tire bladder production in China, according to Ibanhez.

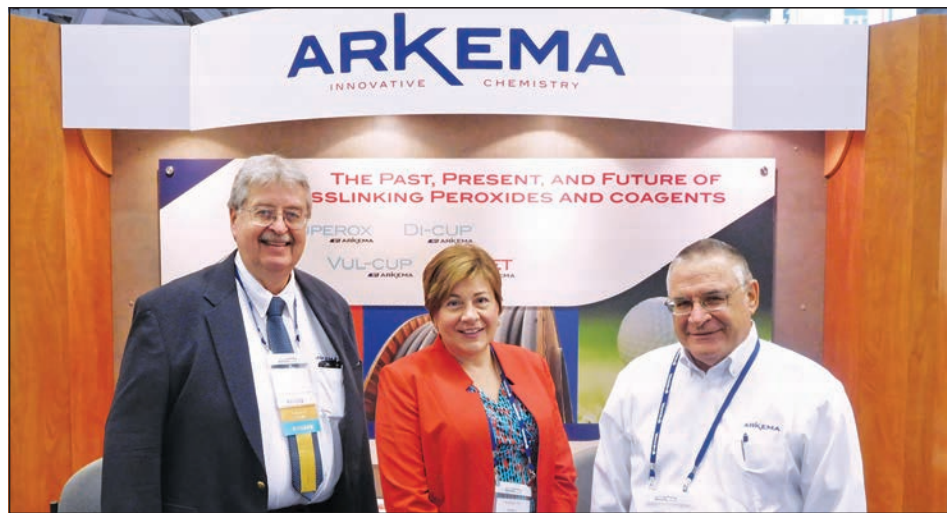
“Bladder production had been focused in the U.S., Argentina and Germany, but we are now expanding production in China to meet demand in Asia,” he said. “We are increasing our portfolio in bladders and release agents.”

Rhein Chemie has growth expectations in 2018, according to Ibanhez. “We will focus on the U.S. market and finding new opportunities in the tire industry,” he said.



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RPN photo by Miles Moore

Representing Arkema at the Rubber Expo are, from left: Leonard H. Palys, principal scientist, organic peroxides R&D; Nancy Storoz, business director, organic peroxides, Functional Additives; and Marty Gregor, senior account manager, organic peroxides Functional Additives.

Arkema peroxide has use in EPDM products

By Miles Moore

Rubber & Plastics News Staff

It only makes sense that Marty Gregor, senior account manager, organic peroxides, in the Functional Additives Group at Arkema Inc., is opening his 50th year in the rubber industry by doing what he does best—promoting an important new product for his company.

Gregor was at the International Elastomer Conference in Cleveland Oct. 9-12, representing Arkema in its introduction of Luperox AIR-XL technology, a hot air curable organic peroxide for EPDM compounds.

“I never wrote a resume in 50 years,” said Gregor, who began his career straight out of Lehigh University with a bachelor’s degree in chemistry in 1968. “In those days, your grades were your resume.”

Finding work with the then-Hercules Powder Co. in Wilmington, Del., Gregor spent six years helping to develop Hercules’ rosin-based emulsifiers for SBR, then helped build the market for the company’s groundbreaking epichlorohydrin rubber technology.

By 1995, Gregor was working in Hercules’ organic peroxide business in Akron, partnering with Harwick Standard Distribution Co. on Di-Cup and Vul-Cup organic peroxides. He stayed with the organic peroxide business when Hercules sold it to GEO Specialty Chemicals, and again when GEO sold it to Arkema in 2009.

“I worked with Hercules for more than 30 years, a big company at that time—one of the top five in the U.S.,” he said. “Then GEO was a company owned by a financial group, with cherry-picked professionals. GEO hired four or five people that came from Hercules, and I wore a lot of hats there.”

“With Arkema, I came back to a large chemical entity, and it got claustrophobic for the first couple of months,” he said. “But Arkema tech-wise is one of the best companies around. In the Functional Additives Group, the people are just great to work with, so here I am.”

Gregor was accompanied at the IEC by two other executives from the Functional Additives Group—Len Palys, principal scientist for organic peroxides R&D, and Nancy Storoz, business director, organic peroxides. Palys presented a paper at the IEC on Luperox AIR-XL technology.

The great advantage to Luperox AIR-

XL is in auto weatherseal profiles, according to Palys.

“Sulfur is able to cure in hot air tunnels, but not conventional peroxides,” he said. “Peroxide interferes with the weatherseal surface, so you get a sticky surface.”

By enabling the curing of elastomers in the presence of air, Luperox AIR-XL allows for the production of an excellent, tack-free surface finish ideal for weather-seals, according to Palys and Gregor.

Luperox AIR-XL was designed specifically to improve EPDM, EPM and HNBR mechanical performance and heat aging as compared with sulfur cure.

“This is the last area besides tires to offer a replacement for sulfur in a critical part,” Palys said. “This gives the manufacturer more opportunities to look at other elastomers.”

Elastomers cured with Luperox AIR-XL also are nitrosamines-free, offering tangible health and safety benefits, he said.

Luperox AIR-XL also will eliminate hot tear problems, according to Palys. “Elastomers won’t rip when you remove them from the mold,” he said.

Arkema still is recovering from the damage it suffered at its organic peroxides facility in Crosby, Texas, according to Storoz. The Crosby plant lost power Aug. 28 in Hurricane Harvey, and trailers filled with organic peroxides caught fire, prompting local authorities at one point to evacuate an area within a 1.5-mile radius of the plant.

The most serious damage the Crosby facility sustained was from flooding, according to Storoz. “The fires were in the trailers only,” she said.

Arkema declared *force majeure* at Crosby, and the facility continues to operate under that status, according to Storoz. Some of the plant’s materials suppliers in the area continue to do the same, she said.

“There’s nothing yet about lifting *force majeure*,” she said. “We hope in the next couple of months to have a much deeper assessment of the damage at Crosby, to help us rebuild and restart.”

While logistics are a challenge, Arkema continues to supply its organic peroxides customers with products from its supply chain around the world, according to Storoz.

“In regard to our rubber customers, one of the advantages we have is redundancy of production, even before Harvey,” she said. “It’s just good supply management.”

Hallstar assists DuPont with VMX elastomers

By Miles Moore

Rubber & Plastics News Staff

Hallstar, the Chicago-based specialty chemicals company, is helping DuPont achieve new levels of high temperature resistance in its VMX series of ethylene acrylic elastomers through newly developed high-performance ester plasticizers, according to Hallstar executives.

Erica Anderson, senior chemist for industrial polymers at Hallstar, presented a paper on these developments at the International Elastomer Conference in Cleveland Oct. 9-12.

“We performed this work in conjunction with DuPont for VMX,” Anderson said at the IEC. “These elastomers go to even higher temperatures than before.”

According to the abstract of Anderson’s paper, ethylene acrylic elastomers are traditionally used in applications requiring performance both in extreme temperatures and when exposed to a variety of fluids.

However, the need for performance at ever higher temperatures necessitates the development of new materials to improve on permanence and volatility, it said.

“This paper provides information on newly developed plasticizers intended to improve high temperature performance without sacrificing low temperature performance,” it said.

According to Anderson, the new plasticizers allow DuPont VMX polymers to perform at temperatures up to 200°C.

“This allows for better performance in auto applications that require high heat,” she said.

Under-the-hood applications, such as seals, hoses and other parts close to the engine, are the ones for which VMX polymers manufactured with the new Hallstar plasticizers are intended, according to Dejan (Dan) Andjekovich,



RPN photo by Miles Moore

Erica Anderson, senior chemist for industrial polymers at Hallstar, works the booth with Dejan (Dan) Andjekovich, Hallstar’s technical director for industrial polymers.

Hallstar technical director for industrial polymers.

“Think of a car in Minnesota,” Andjekovich said. “In winter, the temperature under the hood can go down to -30°C, and the polymers cannot become brittle. But in summer the temperature can go up to 180°C in operation, so performance at both extremes is crucial.”

Development of the new plasticizers was a joint project with DuPont, according to Anderson.

“They provided us with materials and helped us put together an experimental plan,” she said.

The work Anderson presented in her paper is just the first part of an ongoing project, according to Andjekovich. “We hope to reveal the results of the second round of testing next year,” he said.

Hallstar works directly with its customers to identify their problems and provide solutions, Andjekovich said.

“These are proprietary platform projects for long-term market growth,” he said.

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Calendar

Rubber groups

Detroit Rubber Group: Board meeting, Dec. 4, Steve & Rocky's Restaurant, Novi, Mich. (Jim Eddy, eddy@zeonchemicals.com; www.rubber.org)

Energy Polymer Group: Winter technical meeting, Jan. 11, venue TBD, Houston. (www.energypolymergroup.org)

Fort Wayne Rubber & Plastics Group: Technical meetings, Dec. 14, Feb. 8, April 12, June 14, Sept. 13 and Dec. 6, 2018, Ceruti's, Fort Wayne, Ind. (www.fwrpg.org)

Mexico Rubber Group: Course: Analyzing Components of a Rubber Good, Nov. 23, Rubber Chamber Auditorium; End of the Year Luncheon, Dec. 8, Concamin Ballroom. (52-55-55666199; 52-55-55352266; Francisco Martha cni1@prodigy.net.mx; Miguel Bernal cni2@prodigy.net.mx; Jose Gazano antogua@prodigy.net.mx; www.cnih.com.mx)

New England Rubber Group: Winter Gala 2018, Jan. 20, Mystic Aquarium, Mystic, Conn. (www.nerpg.com)

IN COMING WEEKS

Mexico Rubber Group: Course: Analyzing rubber components . Nov. 23

Detroit Rubber Group: Winter board meeting. Dec. 4

Thermoplastic Concentrates 2018 conference Jan. 24

Medical Design & Manufacturing West Show Feb. 6

Ohio Rubber Group: Technical meetings, Jan. 30, Apr. 10 and Sept. 25, Hilton Garden Inn, Twinsburg, Ohio. (www.ohiorubbergroup.org)

Southern Rubber Group: Winter meeting, March 5-7, Embassy Suites Greenville, Greenville, S.C.; Summer meeting, June 11-13, Hilton Myrtle Beach Resort, Myrtle Beach, S.C. (www.southernrubbergroup.org)

group.org)

Seminars/conferences

American Coatings Show and Conference 2018: Biennial event featuring coatings, paints, sealants, construction chemicals and adhesives, April 9-11, Indianapolis Convention Center, Indianapolis. (www.american-coatings-show.com)

american-coatings-show.com)

Future Tire Conference: Bringing together top-level industry leaders to discuss technology and market developments that shape the future of the tire industry, May 30-31, Congress Centre North of Koelnmesse, Cologne, Germany, organized by *European Rubber Journal*. (dbushell@crain.com; www.tyre-conferences.com)

I TEC: Tire Manufacturing: Biennial event spotlighting the tire industry, organized by *Rubber & Plastics News*, Sept. 11-13, John S. Knight Center, Akron. (bweaver@crain.com; www.rubbernews.com/conferences)

International Silicone Conference: Focus on latest innovations in industry, organized by *Rubber & Plastics News*, Shin-Etsu and Wacker, April 10-11, Sheraton Suites, Cuyahoga Falls, Ohio. (bweaver@crain.com; www.rubbernews.com/conferences)

MD&M West Show: Medical design and manufacturing expo featuring suppliers to medical industry, Feb. 6-8, Anaheim Convention Center, Anaheim, Calif. (http://mdmwest.mddionline.com)

Polymer Foam 2018: International conference on foam technology and applications in thermoplastic and elastomeric products, June 19-20, Marriott City Center, Pittsburgh. (www.amiplastics.com/events)

Polymers in Cables 2018: International conference and exhibition for polymers in cable applications, June 19-20, Sofitel Philadelphia, Philadelphia. (www.amiplastics.com/events)

RCI International Convention & Trade Show: March 22-27, Marriott Marquis Houston. (800-828-1902; www.rci-online.org/building-envelope-edu/convention-ts/)

Techtextil North America: 14th symposium featuring developments in technical textile and non-wovens, held in conjunction with Texprocess Americas and JEC Americas, May 22-24, Georgia World Congress Center, Atlanta. (www.techtextilNA.com)

Thermoplastic Concentrates 2018: Examines key issues facing the thermoplastic concentrates industry, Jan. 24-26, Fort Lauderdale Marriott Coral Springs Golf Resort, Coral Springs, Fla. (Stephanie Berchem, 610-478-0800, sb@amiplastics-na.com; www.amiplastics-na.com/events)

Tire Technology Expo 2018: 18th showcase for the global tire design, development and manufacturing industry, Feb. 20-22, Deutsche Messe, Hanover, Germany. (www.tiretechnology-expo.com)

UTECH Las Americas: Trade show, conference on polyurethanes, April 10-12, 2019, Cento Banamex, Mexico City. (www.utechlasamericas.com)

World Elastomer Summit: Conference focused on market predictions for butadiene, synthetic and natural rubber, March 7-8, Duesseldorf, Germany. (www.wplgroup.com/aci/event/elastomers-conference)

Trade/technical associations

ACS Rubber Division: 193rd Technical Meeting & Education Symposium, May 8-10, Hyatt Regency, Indianapolis; International Elastomer Conference, featuring Rubber Expo, 194th Technical Meeting & Education Symposium, Kentucky International Convention Center, Oct. 9-11, 2018, Louisville, Ky. (330-595-5531; www.rubber.org)

Adhesive and Sealant Council: ASC annual Spring Convention & Expo, April 23-25, Hyatt Regency Miami; ASC Executive Leadership Conference, Oct. 15-17, 2018, The Ritz-Carlton Golf Resort, Naples, Fla. (www.ascouncil.org)

Gasket Fabricators Association: Gasketing/Converting Expo, March 19-21, Rosen Shingle Creek, Orlando, Fla. (www.gasketfab.com)

Institute of Scrap Recycling Industries: Annual convention and exposition, April 14-19, Mandalay Bay Resort & Casino, Las Vegas. (www.isri.org)

International Institute of Synthetic Rubber Producers: 59th Annual General Meeting, May 7-10, Hotel NH Collection Madrid Eurobuilding, Madrid. (www.iisrp.com)

NAHAD: 34th annual convention, April 28-May 2, JW Marriott Marco Island, Marco Island, Fla. (www.nahad.org)

NIBA-The Belting Association: Annual convention, Sept. 12-15, Arizona Biltmore Hotel, Phoenix. (www.niba.org)

Polyurethane Foam Association: General meeting, May 23-24, Vinoy Renaissance Hotel & Resort, St. Petersburg, Fla. (www.pfa.org)

Polyurethane Manufacturers Association: Annual meeting, May 5-8, The Naples Beach Hotel & Golf Club, Naples, Fla. (www.pmahome.org)

Power Transmission Distributors Association: Spring meeting and leadership development conference, March 21-23, Hotel Contessa, San Antonio, Texas. (312-516-2100; ptda.org/LDC)

Rubber Roller Group: Annual meeting, May 6-8, U.S. Grant Hotel, San Diego. (www.rubberrollergroup.com)

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Comparison of Payne Effect, dispersion mix tests

By John Dick and Edward Norton
Alpha Technologies

First of two parts

During the mixing process for a rubber compound, the base elastomer is masticated while the other ingredients, such as carbon black, begin to incorporate.

As this process continues, the carbon black agglomerates are deagglomerated and dispersed as primary aggregates while the base raw elastomers are simultaneously masticated and “broken down,” usually through some degree of depolymerization.

We constructed simple model recipes of these selected raw elastomers with N330 carbon black and studied the rheological effects on these experimental

TECHNICAL NOTEBOOK

Edited by Harold Herzlich

compounds from controlled amounts of applied work history during BR Banbury mixing in the laboratory.

Experimental

Table 1 shows the 11 different raw elastomers which were selected for this study.

As can be seen, the selected polymers include a very wide selection of both tire and non-tire rubbers that are commonly used. This selection includes NR, SBR, BR, IIR, CR, BIIR, NBR, EPDM, CSM, and HNBR.

These raw elastomers also were mixed with N330 carbon black in a carefully controlled manner with a laboratory BR Banbury, which was stopped periodically during the mixing cycle to take small sample aliquots between 3 and 7.5 min-

Fig. 1: RPA 2000.



Fig. 2: Alpha View Dispergrader.



Executive summary

Compounds based on different base elastomers will break down in different ways during the mixing process and have different degrees of interaction with carbon black, which affects carbon black dispersion. This affects downstream factory performance in extruding, calendaring and molding.

Last year a new standard method for measuring the Payne Effect was developed as ASTM D8059 using the RPA. Also, in 2011 a standard method was developed using a special reflected light microscope to measure state of mix by percent carbon black dispersion under ASTM D7723.

In this study, an RPA 2000-brand Rubber Process Analyzer with EDR was used to measure the differences in rheological behavior from using different base elastomers with variation in the applied work history during mixing. Model rubber compounds were prepared and tested using several different base elastomers. Processability characteristics as seen in the Payne Effect were measured for these mixed stocks with varying work histories using the RPA 2000 with EDR. Comparisons also were made with the AlphaView Dispergrader-brand reflected light microscope.

utes of mixing time. Because the specific gravity for these elastomers were different, all comparisons were made on an equal volume basis so that each batch would always contain exactly 35 percent by volume carbon black.

These mixed samples were tested for “state of mix” with the Alpha Technologies RPA 2000 Rubber Process Analyzer shown in Fig. 1 as well as with the Alpha Technologies Alpha View Dispergrader special light reflected microscope shown in Fig. 2.

This light reflecting microscope works off the principle of quantitatively mea-

suring the reflecting light from the undispersed carbon black agglomerates (white area) vs. the light which is not reflected into the microscope lens as illustrated in Fig. 3.

Measuring carbon black

This part of the study involved measuring rheologically the effects of carbon black incorporation and deagglomeration at different states of mix during the Banbury mixing process.

In this design of experiment, each raw elastomer compound was mixed with

See Comparison, page 16

Table 1: Shows the 11 different raw elastomers which were selected for this study.

Name of Rubber	ASTM Abbreviation	Trade Name	Specific Gravity
Styrene Butadiene Rubber	SBR	SBR 1500	0.94
Hydrogenated NBR	HNBR	Zetpol 2010	0.95
Polychloroprene	CR	GRT	1.23
Polychloroprene	CR	WRT	1.24
Bromobutyl Rubber	BIIR	Bromobutyl 2244	0.93
Ethylene Propylene Diene Rubber	EPDM	Nordel IP5565	0.87
1,4 cis Polybutadiene Rubber	BR	Budene 220	0.92
Acrylonitrile Butadiene Rubber	NBR	NBR DN 2850	0.97
Butyl Rubber	IIR	Butyl 268	0.92
Natural Rubber	NR	SIR 20	0.92
Chlorosulfonated Polyethylene	CSM	Hypalon 3570	1.2

Fig. 3: Alpha View Dispergrader light reflecting microscope.

The Basic Measurement

- The image is scanned.
- Flat area (no bumps) is seen as black.
- Surface roughness (bumps) is seen as gray to white.



The authors



Dick

Norton

John Dick has more than 45 years of experience in the rubber industry.

He was with BF Goodrich and later Uniroyal Goodrich Tire Co. as a section manager and development scientist in research and development until 1991 when he joined Monsanto's Rubber Instruments Group (now Alpha Technologies) as a senior scientist, applications.

Dick has authored more than 80 journal and magazine publications including five books on rubber technology. He consults, gives technical papers and has given seminars in more than 40 countries. Some of his publications have been translated into nine languages. He received the Monsanto Master Technical Service Award, the ACS Rubber Division “Best Paper Award,” and the University of Akron and University of Wisconsin Appreciation Awards for Teaching rubber compounding and testing courses in their continuing education programs.

Dick is a fellow in ASTM International, receiving the Award of Merit in 1990 and Distinguished Service Award in 2005. He also has represented the U.S. as a delegate to the International Standards Organization for the last 35 years.

He was appointed in 1992 to be leader of the U.S. delegation to ISO TC-45 on Rubber. He teaches 10 rubber technology courses at the University of Akron and University of Wisconsin continuing education departments.

Dick is a member of the American Chemical Society, Society of Rheology, and ASQ with a CQE and CQA. He also is a co-recipient of the ACS Rubber Division's 2014 Fernley H. Banbury Award for Rheology.

He received his bachelor's degree from Virginia Polytechnic Institute and a master's from the University of Akron.

Ed Norton graduated from Rose-Hulman Institute of Technology in 2011 with a bachelor's degree in chemical engineering.

He has been working at Alpha Technologies since 2010 as an applications specialist. His primary job functions include customer training and demonstrations, research and development, and aftermarket support.

He works to help customers in the rubber industry evaluate their formulations, processes and products using viscometers, rheometers, and other instruments. He has participated in many rubber groups and conferences in the U.S.

Norton currently is working on his master's degree at the University of Akron's polymer engineering graduate program.

Technical

Comparison

Continued from page 15

exactly 35 percent by volume of N330 carbon black.

During the BR Banbury mixing process, 20 grams aliquot samples were taken from the mixer after 3, 3.5, 4.5, 5.5, 6.5 and 7.5 minutes, as sampling intervals. Each of these samples were tested on the RPA by the new ASTM D8059 Standard for the Payne Effect.

For this study, a time test was applied at ± 0.07 percent strain, 1 Hz and 100°C for 2 minutes before the Payne Effect Strain Sweep was applied. This strain

sweep was applied at 1 Hz and 100°C, starting with ±0.07 percent strain, followed by ±0.1, 0.14, 0.2, 0.28, 0.35, 0.5, 0.7, 1.0, 1.4, 2.0, 2.8, 3.5, 5.0, 7.0, 10.0, 14, 20, 28, 35, 50, 70, 100, and 140 percent.

Also, respectively, samples from these mixing processes were run in duplicate on the Alpha View Dispergrader by the new ASTM D7723 procedure for measuring percent carbon black dispersion. The test conditions for running these tests were as follows:

- White area threshold: 23 μm
- Exposure time: 40 ms
- Position of illumination: Top
- Color channel for analysis: Blue

The following equation was used to calculate percent Z Dispersion:

$$\% Z = 100 - 100 \text{URF}\%/35$$

Where:

- URF % = % of total scan from undispersed filler measured in reflection
- % Z = Weighted percent dispersion or “Z Value,” which assumes maximum of 35 percent white area.

Discussion

Incorporation and deagglomeration of carbon black

The Payne effect is an effective way of studying deagglomeration of fully reinforcing carbon black during the rubber compound mixing process. It should be an effective way of relating to carbon black aggregate—aggregate attraction vs. the carbon black aggregate attraction to the specific rubber hydrocarbon medium.

Different rubber hydrocarbon mediums have different affinities for the carbon black filler. For example, it is well known that in various blends of different types of rubber polymers, one domain of rubber (at the microscopic level), will have a greater attraction (or affinity) for the available carbon black than the other rubber present in the blend.

Usually different rubbers in a compound blend are not perfectly soluble with each other so they will commonly establish continuous and discontinuous phases. Therefore, typically the available carbon black is attracted more to either the continuous or the discontinuous rubber phase.

The typical carbon black affinity for different elastomers is:

See Comparison, page 18

Fig. 4: Effects of increasing mixing time on measured Payne effect curves for Banbury mixing of SBR 1500 and N330 carbon black.

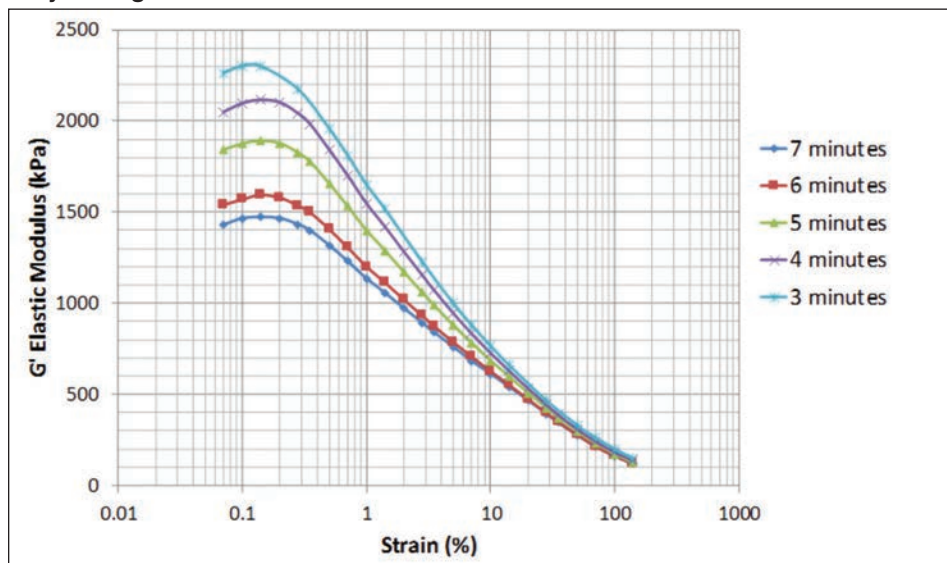


Fig. 5: G' Payne effect at 0.07 percent strain vs. work history for mixing of SBR 1500 and N330.

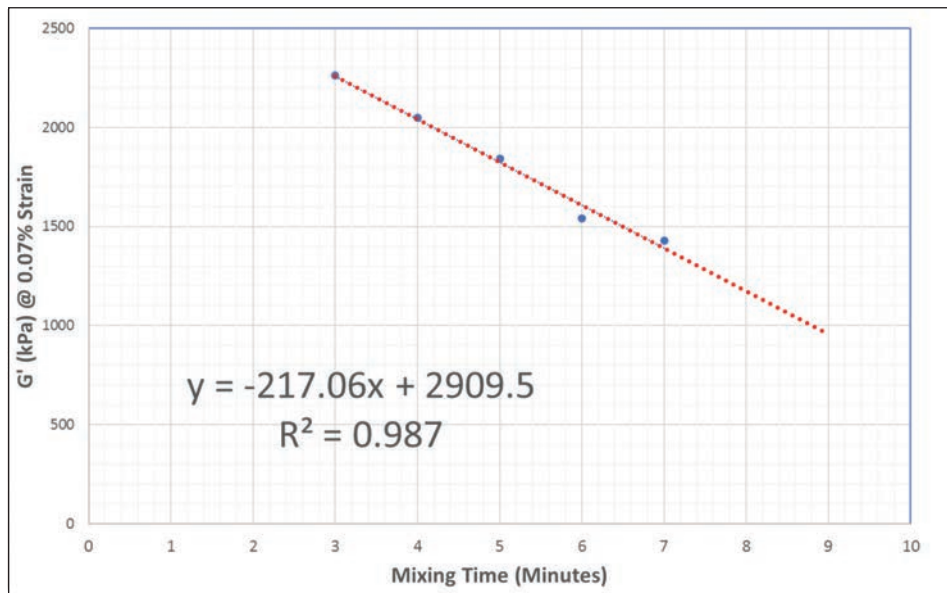


Fig. 6: ASTM D7723 percent Z dispersion vs. work history of mixing SBR 1500 vs. N330.

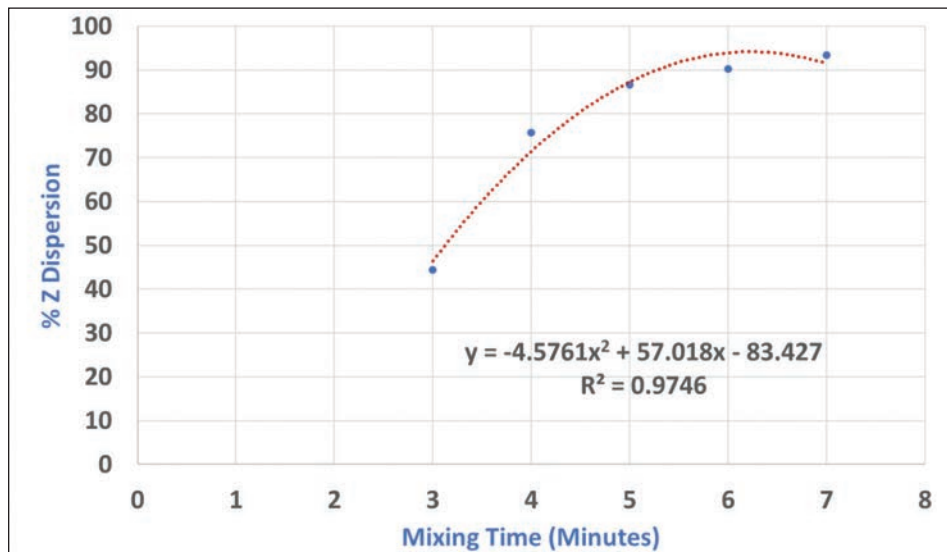


Fig. 7: Effects of increasing mixing time on measured Payne effect curves for Banbury mixing of natural rubber TSR 20 and N330 carbon black.

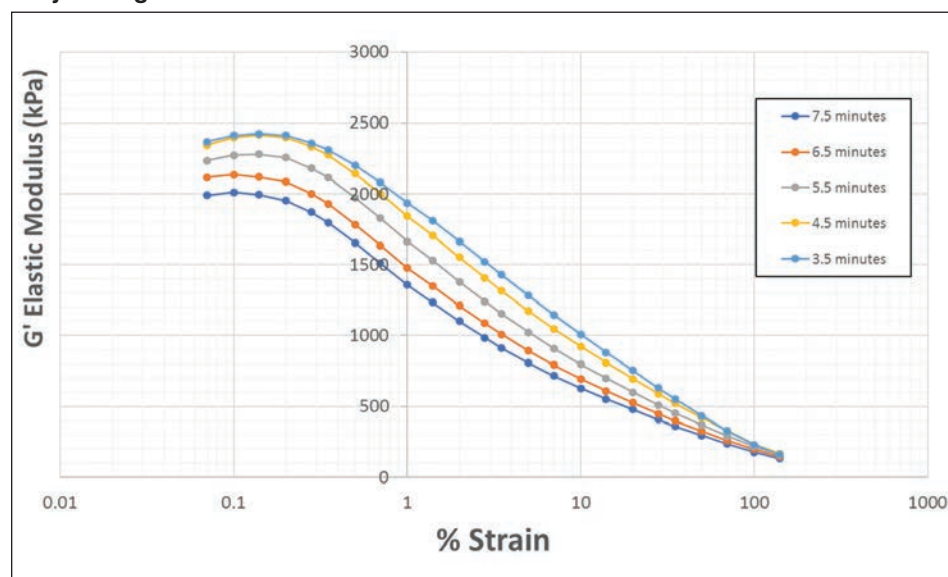


Fig. 8: G' Payne effect at 0.07 percent strain vs. work history for mixing of TSR 20 natural rubber.

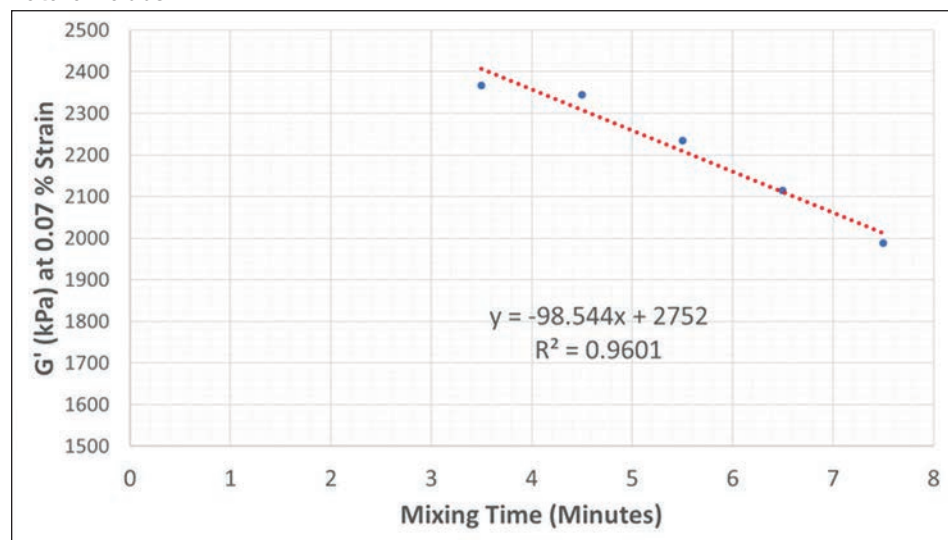
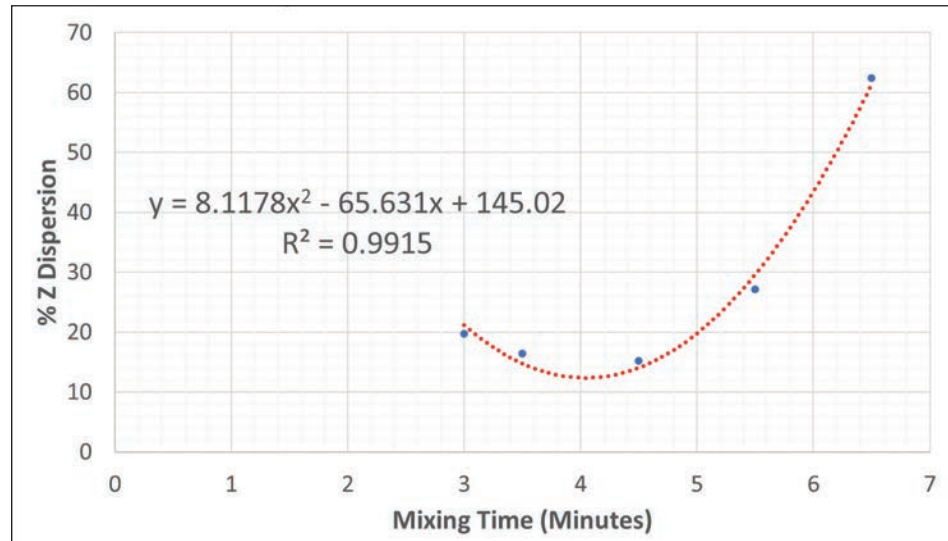


Fig. 9: ASTM D7723 dispersion vs. work history of mixing TSR 20 natural rubber with N330.





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Technical

Comparison

Continued from page 16

BR > SBR > CR > NBR > NR > EPDM > IIR

So carbon black is much more attracted to the BR phase (polybutadiene rubber) than the IIR (butyl rubber) phase.

SBR

From the Payne Effect RPA measurements, the SBR test results show a great distinction in the Payne Effect curves based on the time intervals being applied during the mixing of SBR 1500 and N330 carbon black shown in Fig. 4.

The affinity of carbon black to SBR 1500 is high. During the mixing process,

the carbon black readily deagglomerates in the SBR medium because of this attraction between SBR and carbon black.

As can be seen, with only the limited work history applied from 3 minutes of mixing time, the filler agglomeration network is rather high as shown from the G' elastic modulus value measured at the low initial applied strain of only 0.07 percent. However, as the mixing time and resulting work history increase, the measured G' value decreases from the destruction of the agglomerate-agglomerate filler network and the corresponding increase in the macro-dispersion of the N330 carbon black.

Fig. 5 shows how well the G' Elastic Modulus for the Payne Effect at 0.07 percent strain predicts the state of mix and degree of deagglomeration for the

Fig. 10: Effects of increasing mixing time on measured Payne effect curves for Banbury mixing of Budene 220 (BR) and N330 carbon black.

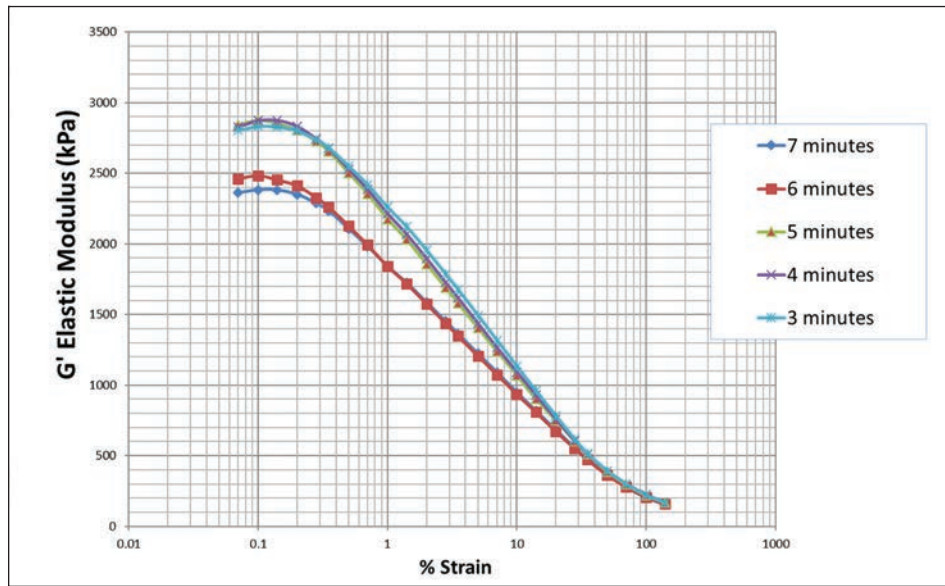


Fig. 11: G' Payne effect at 0.07 percent strain vs. work history for mixing polybutadiene rubber (BR).

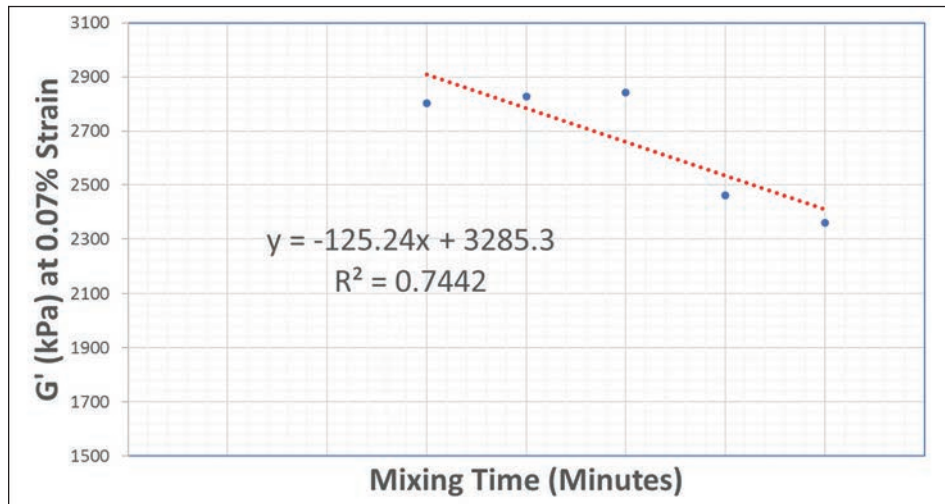


Fig. 12: ASTM D7723 dispersion vs. work history of mixing BR (Budene 220) with N330.

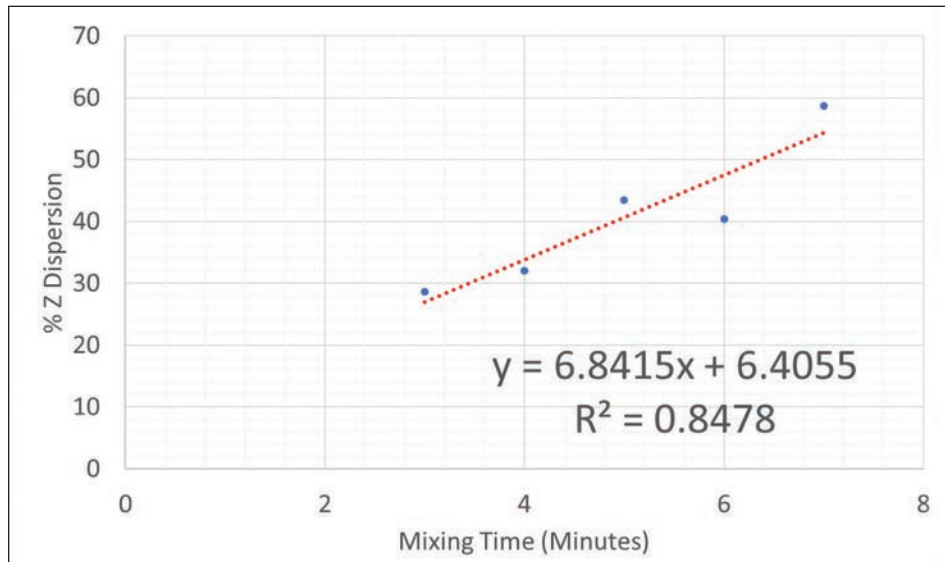


Fig. 13: Effects of increased mixing time on measured Payne effect curves for Banbury mixing of bromobutyl 2244 rubber (BIIR) and N330 carbon black.

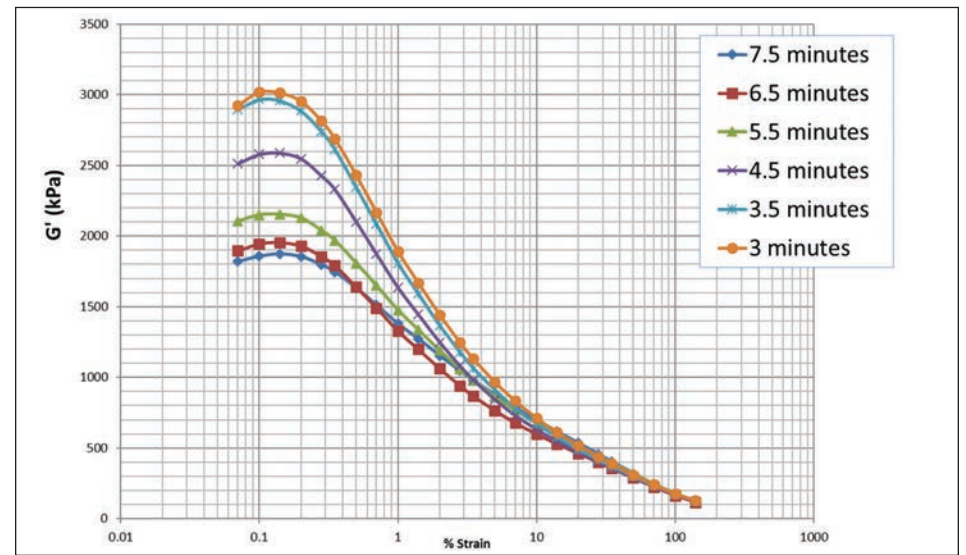


Fig. 14: G' Payne effect at 0.07 percent strain vs. work history for mixing bromobutyl 2244 with N330.

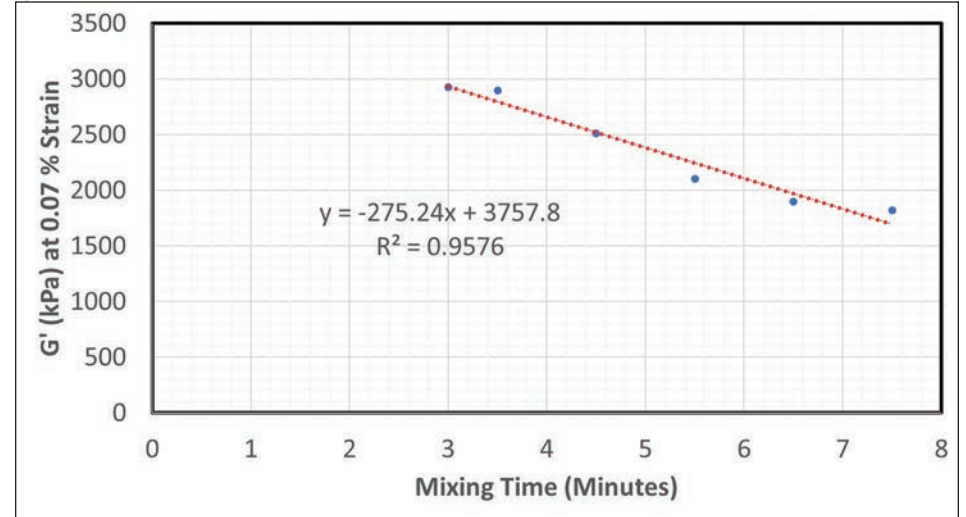


Fig. 15: ASTM D7723 percent Z dispersion vs. work history of mixing BIIR vs. N330.

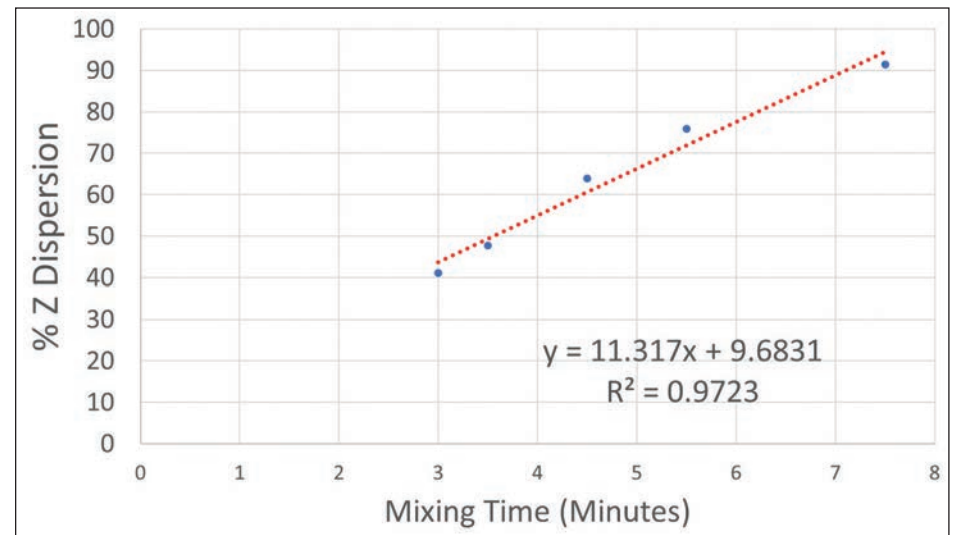
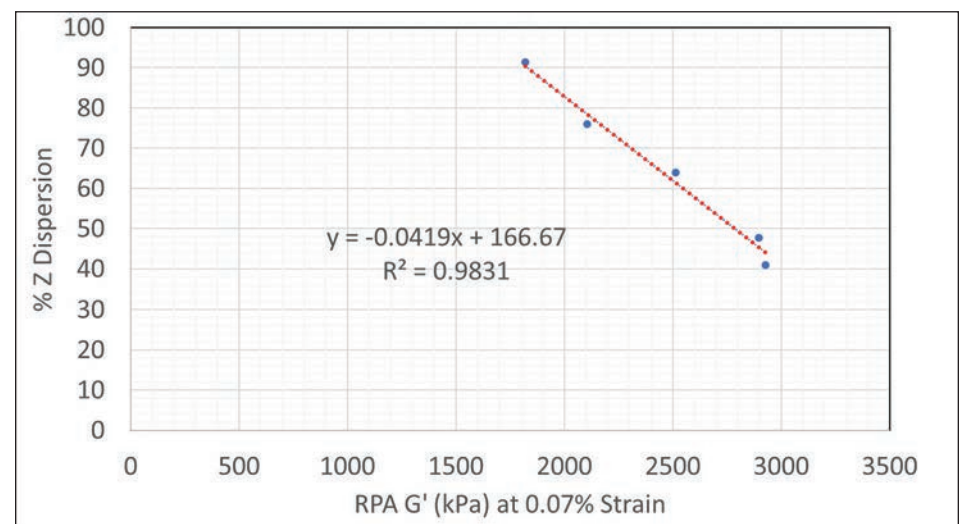


Fig. 16: ASTM D8059 G' at 0.07 percent strain vs. ASTM D7723 percent Z dispersion for BIIR.



Technical

dispersing of N330 carbon black in the SBR 1500 rubber.

As can be seen, the Payne Effect G' correlates very well to the state of mix and inversely to the aggregate-aggregate network density.

Fig. 6 shows the very good correlation of the percent Z Dispersion as performed by ASTM D7723 with the state of mix.

In a way, the shape of this curve represents the “law of diminishing returns,” which we reported in 1992 using the older, slower, optical microscopy method ASTM D2663, which gave close to the same profile.

For each marginal addition in work history, there was a smaller increase in percent dispersion of carbon black. By using the Alpha View Dispergrader (ASTM D7723), one produces a very

similar curve but much faster and perhaps more accurate. ASTM D7723 also was quite effective at measuring the “state of mix” using SBR as the raw elastomer in this mixing experiment.

TSR 20 Natural Rubber

Also, TSR 20 natural rubber was studied for its carbon black dispersion characteristics. **Fig. 7** shows the effects of different amounts of work history on the Payne Effect profiles.

Just using the G' at 0.07 percent applied strain on the RPA can be used to predict state of mix as shown in **Fig. 8**. Also the ASTM D7723 percent Z value for carbon black dispersion is a good predictor of state of mix for a natural rubber base, as shown in **Fig. 9**.

In this experiment, unlike the SBR,

which readily accepted the N330 carbon black during the early stages of mixing, the TSR 20 natural rubber was more resistant in accepting the carbon black initially, but readily accepted the N330 in the later stages of mixing.

Normally the TSR 20 grades of natural rubber can contain as high as 0.20 percent dirt, which usually is defined as impurities which have a particle size greater than 44 μm . This level of contaminant can appear as contributors to the “white area” in the percent Z calculation and actually make the percent Z values lower than they normally would be with SBR, for example.

More work needs to be performed to determine just how much negative effect that a relatively high “dirt” level might have on the percent Z values.

BR

Comparisons also were made with 1,4 cis-polybutadiene rubber used as the base rubber in this study. In rubber compounding, BR is seldom used as the sole rubber in a formulation because of some processability issues.

Normally BR is used in many applications as a blend with either SBR or natural rubber (already discussed). **Fig. 10** compares the Payne Effect profiles for the test BR compounds being mixed with N330 carbon black with different applied work histories.

This BR compound did not break down in the same manner that the SBR did. In fact, using the G' at 0.07 percent strain gave only a fair prediction of state of mix, as shown in **Fig. 11**.

However, **Fig. 12** shows that the ASTM D7723 (Dispergrader) did somewhat better in measuring the progression of the state of mix than the G' Payne Effect. Because of these particular problems with 100 phr BR (which is rarely used by itself), the ASTM D7723 percent Z dispersion was somewhat better.

BIIR

Fig. 13 shows the effects of using bromobutyl rubber in these experiments. With the halogenation of butyl into bromobutyl rubber, there is very significant separation of the Payne Effect curves from applying different mixing times.

Fig. 14 shows the effectiveness of using the Payne Effect G' at 0.07 percent to predict the state or quality of mix of the subject compound.

As can be seen from the brominated butyl compound, the G' Payne Effect at 0.07 percent curve is very effective at predicting the state or quality of mix with carbon black. From **Fig. 15**, the ASTM D7723 Dispergrader test was able to also achieve an equally effective prediction of state of mix for the BIIR with the N330 carbon black.

The direct correlation between ASTM D7723 percent Z Dispersion vs. the ASTM D8059 G' Payne Effect at 0.07 percent strain (using the RPA with EDR), all with BIIR, is shown in **Fig. 16**.

The R square shows 98 percent of this correlation. The brominating of butyl rubber has a profound effect on the mixing quality of BIIR and N330 carbon black.

IIR

Regular butyl rubber behaves and processes very differently from the bromobutyl that we were just discussing earlier. Rheologically and from a processing perspective, regular butyl rubber (IIR) behaves very differently because it is not brominated as seen from its Payne Effect Curves shown in **Fig. 17**.

Unlike the BIIR, which has its Payne Effect curves greatly affected from variations in applied mixing work history, the regular IIR (without the benefit of bro-

mine) shows very little change from variations in mixing work history. **Fig. 18** shows the resulting poor correlation between G' at 0.07 percent and mixing time.

Because of the closeness of the G' Payne Effect curves for regular butyl rubber, the correlation between G' at 0.07 percent strain with mixing time is very poor and “noisy.” The butyl rubber is relatively less compatible in the dispersion of the N330 carbon black compared with the BIIR discussed earlier.

On the other hand, **Fig. 19** below shows some correlation of measured percent Z dispersion with mixing time for this regular butyl rubber experiment.

ASTM D7723 may have some advantage here over the ASTM D8059 Payne Effect method for compounds based solely on IIR.

The conclusion of this technical notebook will appear in the Nov. 27 edition of Rubber & Plastics News.

Fig. 17: Effects of increased mixing time on measured Payne effect curves for Banbury mixing of butyl 268 (IIR) and N330 carbon black.

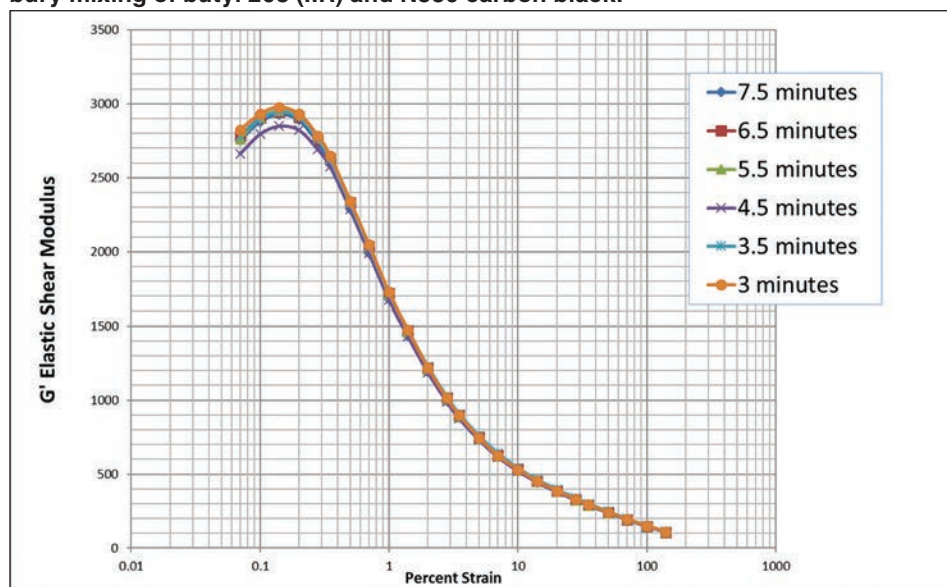


Fig. 18: G' Payne effect at 0.07 percent strain vs. work history for mixing of regular butyl rubber (butyl 268) and N330.

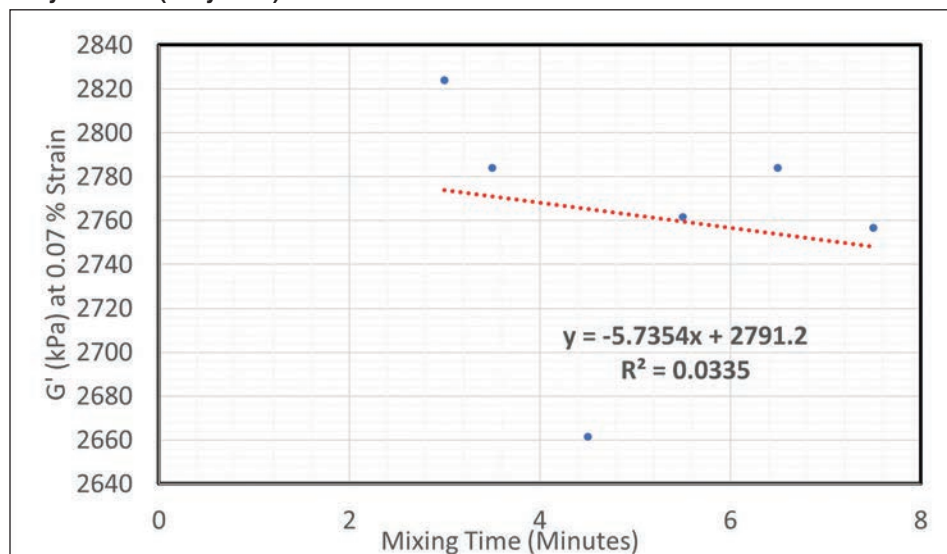
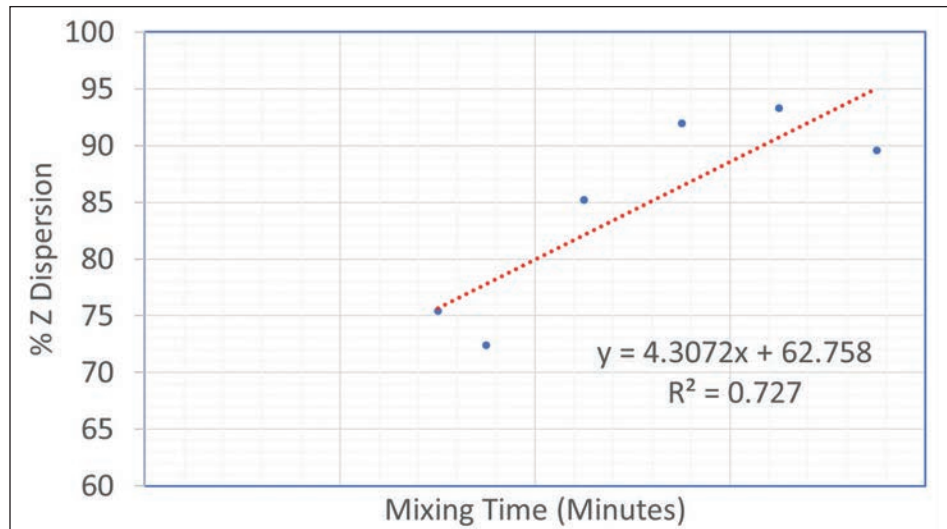


Fig. 19: ASTM D7723 percent Z dispersion vs. work history of mixing butyl 268 rubber with N330.



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Eric brings sales and business development leadership experience from a variety of power transmission companies, including General Electric, Dodge (Rockwell Automation), Rexnord and Colfax Fluid Handling. Eric earned a bachelor's degree in manufacturing engineering from Western Carolina University, a master's degree in business administration from Troy University and is an alumnus of Harvard Business School.

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Rubber & Plastics News

Flexaust

Continued from page 1

its finished goods inventory into one location. The inventory had been fragmented throughout three buildings in Warsaw, but Harvey said the addition will allow it to be located in one.

"It will have a tremendous benefit for efficiencies in our shipping department, and order fulfillment will be a lot easier



The revamped footprint also will free up nearly 30,000 square feet of additional manufacturing space once the layout is organized.

and a lot faster, especially on our 24-hour ship items," he said. "It will also allow us to inventory more product to maximize our runs in each of the departments to gain some efficiencies of scale there."

That means instead of setting up and running certain product lines up to four times a month, it may only need to be run twice a month. "A lot of times our runs were limited to the amount of space we had to stock it," he said.

The revamped footprint also will free up nearly 30,000 square feet of additional manufacturing space. Once the layout is organized, Harvey said Flexaust will look to add one or two additional lines to produce its Flexadux line and two to three additional lines for its Genesis products.

The Flexadux products are made of polyurethanes, thermoplastic elastomers and polyvinyl chloride. They are used in such applications as maintenance and repair operations, woodworking, general purpose hose, air hose, lawn and leaf collection, and some agricultural uses.

The Genesis line is Flexaust's plastic commercial vacuum hoses, made of polyethylene and EVAs. The goods are used in commercial cleaning applications, car wash vacuum hoses, industrial vacuum systems and residential home central vacuum systems.

In addition, Harvey said Flexaust is adding at least one horizontal injection press and two to three more overmolding presses at a third plant in Warsaw that manufactures the Dayflex line of made-to-order assembled hoses. That facility is a 55,000-sq.-ft. structure across the street from the main building.

The Dayflex operation utilizes TPEs, PU, PVC and polyethylene to make hoses for commercial cleaning, sump pumps and commercial floor scrubbers, along with products for the recreational vehicle and marine industries.

Flexaust also has a fourth factory in Warsaw, a 35,000-sq.-ft. unit that is home for operations obtained when it purchased the United Electric Co.—known in the business as TUEC—which is a manufacturer of commercial and industrial vacuum hoses and vacuum cleaning attachments. There, Flexaust has reorganized the warehouse to have six-foot aisles, freeing up space to store all raw materials for use at the four Warsaw plants.

The growth is prompted by increased business across all of Flexaust's markets, according to Harvey. "Unless the bottom falls out, we'll have a record year in sales," he said. "And next year looks like it could be another record year, based on what we're seeing from the distributor world and with all the OEMs the distributors work with, and what they're forecasting for 2018."

He added that this business cycle has been different in that normally some markets go up and others drop, and vice versa. "It just seems everything is steadily going up," Harvey said. "Nothing too crazy. It's just that everything is going up at the same time. I don't know if over 2015 and 2016 everything was so soft for manufacturing, that people have just started reordering again and refilling the pipeline."

Flexaust has a good deal of business with the military and Navy, and he said business with the Navy yards has been strong since December 2016.

Flexaust also has manufacturing facilities in Amesbury, Mass.; El Paso, Texas; and Las Vegas. Harvey said Flexaust plans to add two Genesis product lines to complement the normal Flexaust-style hoses being produced there.



Employment has increased by about 20 positions to a total of about 220 for KraussMaffei Corp., which covers the U.S. and Canada.

KraussMaffei adds \$3 million technical center in Kentucky

By Jim Johnson
Plastics News

FLORENCE, Ky.—KraussMaffei Corp. has created a new innovation center at its U.S. headquarters.

The company, a subsidiary of Germany's KraussMaffei Group, renovated about 20,000 square feet of existing space in its \$3 million project. Work included a new inventory management control system and additional meeting space for customers.

"I would say it just gives us a better image to the market in professionalism and training for our customers in a world-class environment," KraussMaffei President Paul Caprio said.

"We've become rather large in the Americas in terms of market share. I felt we needed to look better than we did. I think it was good, but I think it's better. It's a reflection of who we are. I think you have to look how you want the market to perceive you," he said.

The project took place between January and September and was on display at the company's recent open house for customers and suppliers.

That gathering attracted about 750 attendees and featured displays from 80 other firms.

KraussMaffei undertook creation of the technology center during a time of strong

growth for the company.

Employment has increased by about 20 positions this year for KraussMaffei, which covers the U.S. and Canada, to about 220 workers. Those jobs are located at the company's U.S. headquarters in Florence, which now has about 100 people, and elsewhere in the U.S. and Canada, Caprio said.

The Florence location provides sales and service for the company's three brands—KraussMaffei, Netstal and KraussMaffei Berstorff. Both KraussMaffei and Netstal make injection molding machines, while Berstorff makes extrusion machinery.

"We completely overhauled this 20,000-sq.-ft. space. New floors, new LED lighting, new air conditioning for climate-controlled space. New power to run extrusion equipment trials, injection machinery trials for Netstal and KM, as well as training for all equipment," Caprio said in an additional email interview.

New machinery in the space includes equipment for trials and testing for "extrusion, pipe, profile, sheet, pelletizing and color batch, as well as KM injection and Netstal injection," he said. "We also added a new shuttle inventory system to better handle incoming and outgoing spare parts inventory as we better space management."

Motion

Continued from page 1

deal with Apache," Cefalu said.

Cefalu has known Pientok for more than 10 years and Apache, which is headquartered in Cedar Rapids, Iowa, has been a longstanding vendor to Motion, a wholly owned subsidiary of Genuine Parts Co. Though they had talked in passing about an acquisition before, talks got more serious at a recent meeting, Cefalu said.

The acquisition gives Apache access to greater capabilities for accelerated growth and will ensure that employees will be well-cared for in the future, Pientok said in a statement.

The agreement continues Motion's belt acquisition trail starting when the company bought D.P. Brown of Detroit, then Epperson and Co. of Tampa, Fla., and Colmar Belting Co. in Boston, as well as others.

"It just led to our recognition that we like that business, and it fits perfectly with what we do," Cefalu said.

What the purchase brings to Motion includes experience in sidewalls and guides, along with other value-added products, Cefalu said.

"Previous to us buying Apache, if we needed a value-added belt with a sidewall, we would buy that on the outside," Cefalu said. "Now we have the capability to do it internally. It also gives us some capabilities on the lightweight side to expand what we currently have."

For the hose side, it opens up the agricultural market for Motion, as well as a division that makes baler belts for original equipment manufacturers, Cefalu said.



RPN photo by Kyle Brown

From left, Jill Miller, Apache marketing and communication manager; Gregg Hanson, Apache vice president, sales and marketing; Morten Vejstrup, ScanBelt owner and CEO; Tom Pientok, Apache president and CEO; and Steve Fournier, Apache director of strategic accounts, gather around Apache's booth at the NIBA/PTDA Summit.

The acquisition also opens up the ability for Motion to find new business and opportunities for Apache.

The two companies will integrate quickly, with Motion leveraging its expense side to tie Apache into agreements such as with freight carriers. But the daily

function of the company won't change too much, Cefalu said.

"I think it's business as usual for Apache," he said. "They're going to continue to service their accounts and market as they always have."

Cooper

Continued from page 1

global material research endeavors, from basic chemistry through end products, and supports all of the firm's product lines, which are divided into four segments—sealing, fuel and brake delivery, fluid transfer, and anti-vibration systems.

It offers a fully integrated material development laboratory, provides prototype production, offers production equivalent lines for pilot activities, and features an innovation showroom and vehicle display area, among other capabilities.

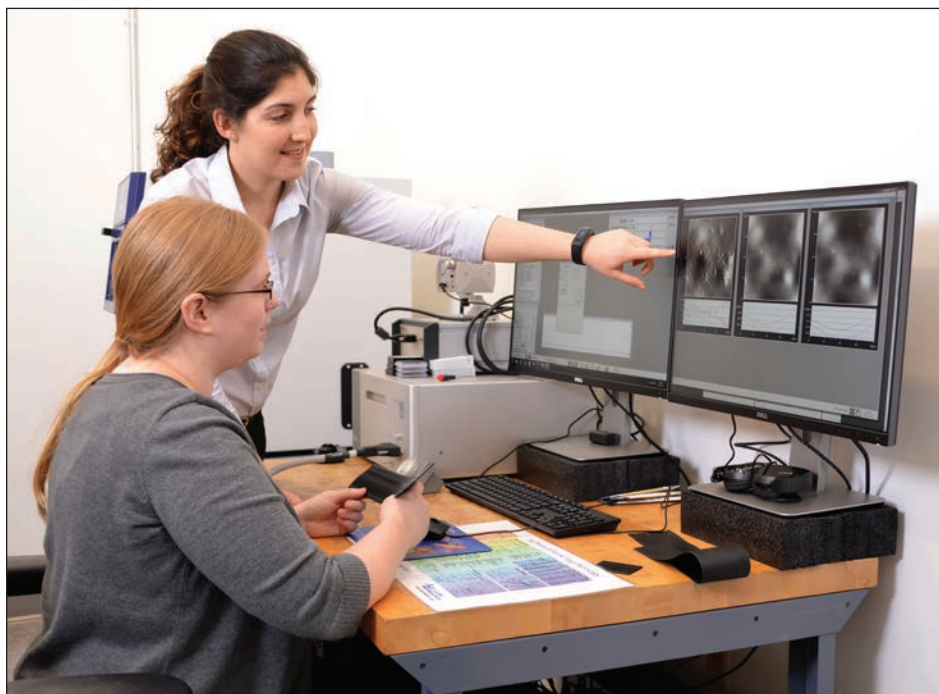
"We created this place to go faster with our innovation," said Chris Couch, vice president, innovation and product groups. "We've been investing in innovation for many years. The first dedicated group was set up in 2013, but the bits and pieces to do that work were scattered around the company. We consolidated in some lab equipment, pilot production lines, tool shop, etc., and got them here under one roof. Now instead of having to beg for time at the plants to do trials, we can go full speed ahead here without breaking into production. And being all under one roof leads to better ideas, speed and accuracy in the trials we're doing."

As autonomous vehicles and ride sharing become more of a reality, Couch said the firm expects miles driven to increase exponentially in certain markets. That will lead to increased requirements for performance and durability. Cars today drive maybe two hours per day, but if that increases to 20 then the seals and parts inside the car need to become more durable.

Vehicle electrification also is becoming a reality, and while Cooper Standard supplies plenty of parts to the powertrain, Couch said the firm is not afraid of the change—in fact it's embracing it. While the fuel line disappears in electric vehicles, he said those vehicles still will require brake lines, a sealing package and actually consist of three to five times more coolant hoses that offset the loss of fuel lines.

And as electric vehicles become more prevalent, cabin noise will become more of a focus. Couch said that OEMs have provided data that show after the engine and powertrain, the largest contributor to cabin noise is the vehicle's glass run system.

"We're clearly seeing the need for



Cooper Standard's lab allows it to perform a variety of tests on its products and spearhead the firm's material science development efforts, leading to new products like Fortrex and Armor Hose.

lightweighting and improved cooling technology," Stephenson said. "When you take the white noise from the engine away, you suddenly notice other noise in the vehicle coming from the exterior and external environment. There's a need for an improved sealing systems technology, which many people don't think about. But all of a sudden there's no more noise coming from the powertrain so it's really driving us to invest significantly in our hose and sealing business."

And regardless of what comes of the U.S. regulatory environment under the current administration, the trend of more fuel-efficient vehicles isn't going anywhere.

"There are the macro trends, which I don't think have changed much in the past couple of years," Couch said. "The regulatory aspect that pushes us toward lightweighting is not new. Even if the regulatory environment in the U.S. dials down a bit with the new administration, the U.S. is only 14 percent of the global market. This is still going to be important everywhere else."

New innovations

Cooper Standard has already rolled out some unique products, highlighted by its new material development—Fortrex.

The new lightweight elastomeric material combines the best attributes of EPDM and thermoplastic vulcanizates, two common materials used in sealing. The firm said Fortrex offers weight savings up to 30 percent compared to EPDM, and avoids the compression set issues associated with TPVs, resulting in a stronger sealing system and reduced cabin noise. It does not weather like EPDM and can be color-matched.

The technology already was picked by two large SUV programs from Detroit OEMs and was named a finalist for the 2018 PACE Awards, given out by *Automotive News*, which is a sister publication of *Rubber & Plastics News*.

The firm also released its ArmorHose III, which uses some chemistry from Fortrex and sealing blended with other technology to produce a hose that provides a 37 percent weight reduction compared to EPDM.

Couch said both products are two examples of the firm's i3 program—which stands for imagine, initiate and innovate. Anyone in the company, from plant-level associates to senior level executives, can participate and submit new ideas.

Those ideas are then evaluated by the firm's Global Technology Council, chaired by Couch and consisting of the firm's regional engineering vice presidents.

So far, it's paying off big. Cooper Standard sold \$385 million of innovation orders through the second quarter of 2017 and is targeting nearly \$1 billion in innovation-related sales by 2025.

Beyond automotive

The firm also is expanding its horizons a bit, looking for new opportunities beyond that of the automotive industry.

The firm recently opened a 138,000-sq.-ft. facility in Sherbrooke, Quebec, which consolidated three facilities and brought the 250 employees in its Industrial Specialty Group together under one roof.

The site will produce extruded EPDM rubber sealing products for the non-automotive industrial, commercial and specialty vehicle markets. It will also house a new enterprise resource planning system and provide employee skill enhancement programs.

Stephenson said ISG currently accounts for less than 5 percent of Cooper Standard's global sales, or about \$170 million based on its 2016 total of \$3.47 billion. The firm is targeting other transportation segments outside of automotive, such as commercial vehicle, agricultural equipment and construction.

ISG initially will focus on North America, but the goal is for it to evolve into a global unit.

"We've had a small business for our non-automotive segment," Stephenson said. "A few years ago we put a formal structure around that group in North America with a dedicated leader to that business. His team is working with commercial vehicles, agriculture and industrial equipment builders. The thought is to take the technology we're developing in the automotive space and scale that technology for other adjacent markets. To do that effectively, we want a dedicated team, with dedicated facilities, and over time we want to grow that business substantially."

But it's also looking to go beyond transportation through licensing agreements for its unique material science capabilities, like Fortrex, bringing it to other industries outside of automotive/transportation.

"Our hope is we have multiple partners servicing multiple end markets for Cooper Standard," Stephenson said. "We're clearly going to maintain and expand our leadership position in automotive, but we really believe in this material science. We can bring that material solution into other markets with partners who can utilize it for what they're doing today."

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The innovation center's test area allows for Cooper Standard to examine its parts on customers' vehicles in-house.

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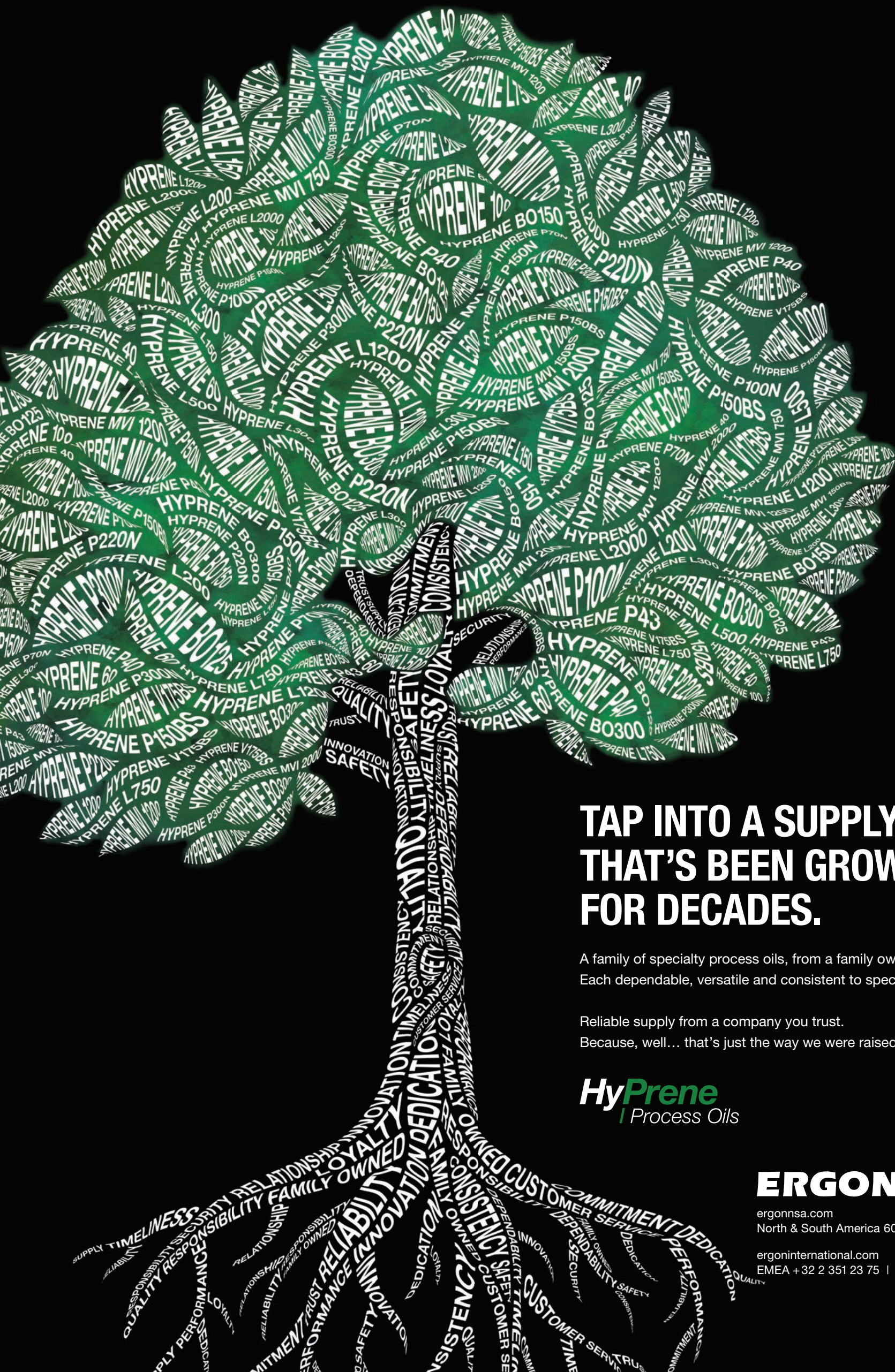
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