

Rubber News

The Rubber Industry's International Newspaper

September 18, 2023 | \$109 per year, \$4.50 per copy

Rising up in rubber industry roles Women make gains, but stats show progress slow



Victoria Rooke at Westminster Tool Inc., one of the youngest, most cross-trained employees in the company, volunteers for advocacy groups aimed at attracting women to manufacturing.

By Erin Pustay Beaven and
Robin Clark
Rubber News Staff

Bonnie Stuck used to be one of the few. And she remembers it clearly, those early days of her career.

Just out of college, she'd been hired into the Tire Division at B.F. Goodrich—the second woman to join the department.

"It was difficult," Stuck said. "... And you pretty much kept your mouth shut. In other words, you didn't complain."

Stories like Stuck's are common across the industry. Countless women understand what it's like to be the only one who looks like them at the conference table, in the laboratory or on the sales call. They have faced challenges that their male colleagues haven't—and maybe even couldn't understand.

And these women persevered. "I think the ones who survived were the people who really worked hard on learning and making yourself valuable to the company," Stuck said.

Stuck, of course, is one of the survivors—building a career in rubber that has

surpassed the 46-year mark. Part of that is due to the respect she earned along the way, simply from doing her job so well.

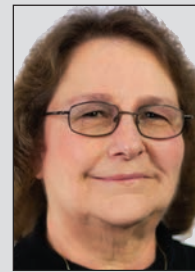
She also remembers the moment it became apparent that her performance defined her career far more than her gender.

While working at the BFG tire factory in Tuscaloosa, Ala., Stuck and a male co-worker were rushing to reach the Banbury mixers. At some point on their run to compounding, her co-worker took the short cut—the one that went right through one side of the men's restroom and came out the other.

Stuck followed him, anyway. When her co-worker realized that she had, he apologized. "I forgot you were a woman," he told her.

"And I thought, 'He doesn't think of me as a woman engineer anymore.' To me that was a defining moment that things had changed," Stuck said.

Changed, indeed. More women have joined the rubber industry ranks as technicians and chemists, scientists and engineers. They've stepped into executive, leadership and sales roles and onto shop floors. Today, at Akron
See Progress, page 26



Stuck

Rubber News **SPECIAL REPORT**
WOMEN BREAKING THE MOLD 2023

Meet the 2023 Women Breaking the Mold honorees, pages 10-20

'A paradigm shifter'

Polymeric technology secret sauce in Bridgestone Potenza Sport AS

By Erin Pustay Beaven
Rubber News Staff

ATLANTA—Every once in a while, you have the chance to be part of something special, something game-changing.

And this tire, the Potenza Sport AS, is one of those things. At least from Dave Severyn's point of view, it is.

He knew it long before Bridgestone Americas Inc. showcased its latest rollout during a ride and drive event at Atlanta Motorsports Park. And he felt it all over again as he watched the tire traverse the wet course—pushing through standing water and gripping the pavement through every slalom, sharp turn and sudden stop.

"It's a paradigm shifter," said Severyn, who served

as lead design engineer on the all-season replacement UHP tire that hit the market Sept. 1.

A paradigm shifter because it represents the future of Bridgestone tires, of what they can be—more sustainable and more sustainably made—and do—push performance parameters farther.

But don't just take Severyn's word for it.

Ask others in the Bridgestone family, and they'll tell you the same. There's an excitement around the launch of Potenza Sport AS because of the big ideas and big technologies behind it—in it. It is, after all, just the second tire to use the company's patented PeakLife polymer—part of the Enliten suite of technologies—in its compound.

And that's significant because PeakLife allows the

See Bridgestone, page 25



Bridgestone is refreshing its popular Potenza line with an all-season UHP tire that promises greater performance, longevity and sustainability.

CRAIN COMMUNICATIONS
©Entire contents copyright 2023 by Crain Communications Inc. All rights reserved.



Plastics News | Rubber News
WOMEN BREAKING
THE MOLD
NETWORKING FORUM

JOIN US NOV. 13-14 IN SCOTTSDALE
RubberNews.com/WBMForum



Plastics News | Rubber News

WOMEN BREAKING THE MOLD

NETWORKING FORUM

NOVEMBER 13-14, 2023 | HILTON SCOTTSDALE, SCOTTSDALE, AZ

Join us this November at the Hilton Scottsdale Resort & Villas for one of the premier events for female professionals in the rubber and plastics industries.



KEYNOTE SPEAKER

Genevieve Caplette

Leadership & Team
Development Manager
Michelin
*How to Use Your Defining Moments
to be a Resilient Leader*



KEYNOTE SPEAKER

Magen Buterbaugh

President & CEO
Greene Tweed
*How to Break Barriers, Shatter Ceilings, and
Ignite New Possibilities*

Scan the QR code to learn more and register or visit
RubberNews.com/WbmForum



SPONSORED BY



MEDIA PARTNER



Rubber News



Georg Brunstam

Hexpol CEO, President Georg Brunstam dies

European Rubber Journal

MALMO, Sweden—Hexpol A.B. CEO and President Georg Brunstam has died, the Swedish compounding group said Sept. 1.

“It is with great shock and grief that we have received this sad notification,” said Alf Goeransson, chairman of the group, noting the unexpected death.

Prior to joining the custom mixing giant, Brunstam held leadership positions in such companies as Nolato and Trelleborg.

Brunstam joined Hexpol as CEO and president in 2008 and took over as chairman of the board in 2017, with Mikael Fryklund, formerly of Trelleborg, taking over the CEO position.

During his time with Hexpol, revenues grew sevenfold, from just below SEK 3 billion to SEK 22 billion.

“Georg was a highly valued leader and colleague who impressed with his commitment, visionary approach and impressive business acumen,” the company said in an obituary posted on its website. “His strength lay in an unforced and straightforward leadership style that made everyone feel seen—from the factory floor to the boardroom. Georg was encouraging and generous with praise and always tried to highlight internal abilities in recruitment.”

In November 2020—after the departure of Fryklund—Brunstam returned to his former leadership position, as both CEO and president of Hexpol.

Brunstam has been credited for his success in developing Hexpol into “a world-leading player in the market of polymer compounds.”

“Georg will be deeply missed within Hexpol, both on a personal and on a professional level,” Goeransson said. “Georg has created a strong organization with many highly skilled and qualified managers.”

Peter Rosen, deputy CEO and chief financial officer, will serve as acting CEO and president while Hexpol’s board searches for a successor.

Inside this edition



6 American Nitrile L.L.C. enlisted help from the University of Akron and other Northeast Ohio entities in getting its glove plant near Columbus, Ohio, up and running.

In focus

Judge gives preliminary OK to revised 3M PFAS suit settlement

By Bruce Meyer
Rubber News Staff

CHARLESTON, S.C.—A U.S. district judge in Charleston has given preliminary approval to a class action settlement between 3M Co. and public water suppliers after a group of attorneys general withdrew their opposition when a number of changes were made to the deal.

U.S. District Judge Richard Gergel issued the preliminary approval on Aug. 29, a day after the attorneys general withdrew their opposition to the agreement that will have 3M pay anywhere from \$10.3 billion to \$12.5 billion to help mitigate the costs associated with claims that 3M contaminated water sources with PFAS chemicals.

“The proposed settlement substantially fulfills its purposes and objectives, and provides benefits to class members, without the costs, risks and delays of further litigation at the trial and appellate levels, and does not require a finding or admission of liability for 3M,” Gergel wrote in his preliminary approval order.

“The negotiations culminating in the proposed settlement occurred at arm’s length, were the product of sufficient investigation and discovery, and involved counsel for plaintiffs who are experienced in similar litigation. Interim class counsel believe this is a fair, reasonable and adequate resolution of Class Members’ Released Claims.”

The proposed settlement now will be submitted to the class members for their consideration, prior to the holding of a final fairness hearing.

The original settlement in the multi-district litigation case was reached June 22. 3M said at the time that the \$10.3 billion it would pay out over the next 13 years would assist public water suppliers with PFAS treatment technologies and support mitigation efforts for eligible PWS who detect PFAS in the future.

The firm added that the agreement would resolve current and future drinking water claims by PWS related to PFOA, PFOS and all other PFAS chemicals.

But on July 26 a coalition of 22 attorneys general—covering 19 states, Puerto Rico, the District of Columbia and Commonwealth of the Northern Mariana Islands—filed a motion to block the settlement, saying it didn’t adequately hold 3M responsible.

After negotiations, however, they withdrew their opposition when a number of changes were made to the agreement, though 3M refused to increase the amount it agreed to pay or the timeframe in which the funds would be paid out.

An executive committee of attorneys appointed by Judge Gergel to lead the litigation on behalf of the public water systems hailed the settlement as a “pivotal milestone” in their efforts to ensure clean and safe drinking water for the communities affected by contamination from PFAS “forever chemicals.”

They said in an Aug. 29 news release that the settlement includes a fund of up to \$12.5 billion to be distributed to any public water system that has detected PFAS in one or more of its water sources. Public water systems that have not yet detected PFAS but must test for contamination are also included in the settle-

ment class. The attorneys said allocation estimates for what public water systems can expect from the settlement can be calculated with formulas available at PFASWaterProviderSettlement.com.

“The federal court’s preliminary approval of 3M Co.’s settlement with the plaintiff public water systems brings us one step closer to allocating billions of dollars toward clean drinking water for countless Americans whose lives have been disrupted by this crisis,” the attorneys said in the release. “We are grateful to the dozens of firms that came together and are optimistic that the court’s final decision will mirror this initial approval, bringing long-awaited relief and justice to communities in need.”



PFAS LIVE
Tuesday, September 26 | 10:00 AM EDT
Hosted by the Florida News-Rubber News Alliance

Editor Bruce Meyer hosts PFAS Live Sept. 26 at 10 a.m. Eastern. To register visit rubbernews.com/events.

They added that the settlement, which averted a trial slated to begin back in June, was reached after a five-year legal battle that involved 37.4 million pages of discovery documents and more than 160 depositions. They said this settlement with 3M and one for \$1.18 billion with DuPont and spinoff companies Chemours Co. and Corteva Inc. “are just the first efforts to hold polluters responsible for fouling our public water supplies.”

3M said in a statement that it is pleased the court granted preliminary approval to move forward with the settlement process. “This agreement will benefit U.S.-based public water systems nationwide that provide drinking water to a vast majority of Americans without the need for further litigation by or on behalf of public water systems,” the company said.

3M is a leading supplier of fluoroelastomers and fluoropolymers with its Dyneon line of products, but the firm said it will discontinue the manufacture and use of PFAS chemicals in all of its products by the end of 2025.

New York Attorney General Letitia James, one of the leaders seeking to block the original settlement, said negotiations between the coalition and 3M brought about a revised settlement that addressed a number of issues they felt were lacking, and “substantially increase the value of the settlement for participating water systems.”



James

Their opposition had centered on such issues as requiring eligible public water systems to waive legal claims against 3M without knowing what settlement funds they could receive, as well as provisions they said would have required water providers to assume future liability, potentially leaving taxpayers to cover the costs of damages caused by 3M’s pollution.

The new settlement that received preliminary approval in the U.S. District Court for the District of South Carolina included several critical changes, James said, including:

- **The uncapped indemnity** in favor of 3M, which could have left water systems liable for damages well beyond their

expected recovery from the settlement, is removed, significantly increasing the value of the settlement to participating water systems;

- **The deadline** for eligible water systems to review the settlement and determine whether to opt-out is extended from 60 to 90 days;

- **The establishment** of a settlement-specific website with information that will allow water systems to derive a good-faith estimate of what they may receive under the 3M settlement agreement if they participate in it, although actual settlement awards will depend on data that is not yet available; and

- **Claims by states** and the federal government are expressly carved out of the agreement, allowing for future action and additional settlements against 3M.

“Corporate polluters like 3M should not be able to duck responsibility for contaminating our waters with toxic ‘forever chemicals’ that have caused devastating health problems,” James said in a news release. “I am proud to have helped secure a better deal for the communities across New York and the nation affected by this pollution.”

California Attorney General Rob Bonta led a coalition of five of the attorneys general who, despite withdrawing their objection to the revised agreement, filed an amicus letter with the court expressing concerns with the settlement. Joining Bonta in filing the letter were the attorneys general of Arizona, the District of Columbia, Pennsylvania, and Wisconsin.



Bonta

Specifically, they objected to the fact that 3M declined to pay more than what was set forth in the original proposed settlement, which Bonta said falls short of the amount that will be needed to pay for the PFAS contamination by 3M to U.S. drinking water supplies. The company also will not pay out the funds more quickly, sticking to a 13-year repayment schedule.

They also said a recent study by the American Water Works Association predicted that the nationwide costs for PFAS regulatory compliance will dwarf the settlement amount.

Bonta said 3M did agree to modify the original proposal in critical ways, including dropping language that would try to prevent states from pursuing their own PFAS lawsuits against 3M, and that California will continue to do just that.

PFAS is an umbrella term used to classify more than 10,000 per- and polyfluoroalkyl substances that are used in a wide variety of goods. While many of the PFAS chemicals have been found to be “chemicals of low concern,” a restriction proposal now under comment period in the European Union conceivably could ban all use of PFAS.

In the U.S., the Environmental Protection Agency along with individual states are in varying stages of looking to put their own regulations on PFAS materials, some of which have been linked to causing harm to both humans and the environment.

Departments

Opinion 8 Technical notebook 21

Sustainably focused Uth receives ISO certification

By Andrew Schunk
Rubber News Staff

FULDA, Germany—No matter where a business exists on a given supply chain, its sustainability achievements—or shortcomings—affect companies both fore and aft of that position.

For its part, rubber machinery manufacturer Uth GmbH is moving the needle toward energy savings and away from greenhouse gases, toward quality management and safety, and away from waste.

To wit, the company several years ago released to market an unvulcanized material recovery system, which can fine-mesh strain recovered rubber material for treads, sidewalls, profiles or sheets at a low temperature.

The TRP Reworker System already is receiving attention from tire manufacturing OEs.

And in early 2022, the company had the foresight to invest \$106,000 in a solar array, which began generating power for the plant and surrounding community of Fulda in February 2022.

For these efforts and more, Uth has achieved two internationally recognized sustainability certificates in the DIN EN ISO 14001 and 9001 categories.

“Environmental management is really important for everyone,” Sascha Kluber, project manager for quality and environmental management at Uth, told *Rubber News*. “It is important for the public and it is important for us.”

“And it gives us certifications in areas that perhaps another supplier does not have.”

While ISO 14001 is issued for practical and qualifying environmental management systems, the 9001 norm is issued for meeting quality management standards, according to the ISO Standards website.

“We want to transparently show that social responsibility and our commitment to sustainability is anchored in Uth’s corporate management,” Peter J. Uth, managing director of the 100-employee firm, said in an Aug. 7 news release.

Uth maintains an in-house environmental management system (for which it received the ISO 14001 standard and the governance of Scope 1 emissions), and that drew the attention of the ISO auditors from CERTainable, who recently visited the Fulda headquarters for the validations.

Efficiency in product development was analyzed, as was the selection of suppliers and the lengths of Uth’s supply lines—considered Scope 3 emissions.

As well, auditors analyzed the handling and disposal of hazardous material and inspected risk management and emergency plans.

“The auditors have confirmed that our environment management fulfills the required criteria,” Uth said. “This certification is a determined step for Uth GmbH because it is a decisive benchmark for our customers.”



Uth GmbH, several years ago, released to market the TRP Reworker System, which can fine-mesh strain recovered rubber material for treads, sidewalls, profiles or sheets at a low temperature.



Peter Uth, second from right, and Sascha Kluber, second from left, receive the ISO certificates in May from Christian and Sarah Weinmeister from the certification company CERTainable.

Environmental protection, sustainability in the supply chain and transparency remain critical in business relationships, Kluber said.

“The certification according to DIN EN ISO 9001 is also a highly gratifying result,” Uth said. “It proves the high standard of our quality management system, which many of our customers from the rubber, tire and silicone industries worldwide rely on.”

Buying in, from top to bottom

Uth said auditors were impressed with the working conditions at the company and the sustainability buy-in, as demonstrated by the staff in Fulda.

“Both the quality and the environmental management systems are practiced by the employees out of conviction,” stated Christian Weinmeister, chief auditor of CERTainable, the qualifying firm for the ISO norms.

Kluber said employees identify with and maintain an allegiance to a reduction in environmental impacts.

“The company management, the department managers and their teams very much identify with the topics of sustainability, climate and work protection,” Kluber said. “And they have done so for a very long time. Finally, the attained certification is an official recognition for our work, which we are very proud of.”

Kluber added that sustainability is embedded in design, development, production, procurement and after-sales at Uth.

“The auditors particularly remarked on the consistent separation of waste, its documentation and proper disposal,” Kluber said.

Auditors also noted that internal communication channels for environmental topics and a centrally located digital communication box helps Uth achieve its green goals.

“This ensures that our management systems will continue to be optimized in the medium and long term,” Uth said. “All processes are regularly checked and enhanced if necessary.”

Uth representatives say the company is well-positioned for the future, in a market with ever-increasing requirements, new standards and specifications.

For particularly good results to achieve clean rubber and silicone, guaranteeing high quality.

Uth can run throughputs of up to 2,500 kilograms an hour, per line. Slab feeders, cutters, metal detectors, weighing equipment and a variety of discharge dies are used throughout the process.

The TRP Reworker typically is used in the mixing area of a tire manufacturing operation and can fine-mesh strain treads, sidewalls, profiles or sheets at a low temperature.

The machine can rework roughly 97 percent of the material back into the process, saving on material waste.

The German firm has had interest from several of the top 10 global tire manufacturers, though an initial push was blunted somewhat by the COVID-19 pandemic.

Savings in solar

Sunlight may be the best disinfectant to aid transparency, but it also has proven to be the cleanest and most abundant source of power for rubber machinery manufacturer Uth GmbH.

The company early last year invested \$106,000 in a new solar array, which is fitted to the roof of a 107,600-sq.-ft. assembly center in Fulda, in the Muensterfeld area.

The system has been in operation since mid-February 2022, while the assembly center was completed “at a seven-digit cost” in 2017.

Environmental responsibility is part of company culture at Uth, according to Julia Uth, head of design and research and development.

“For us, environmentally conscious action is not just a corporate responsibility, it is also reflected in the company’s success,”

Julia Uth told *Rubber News* last year. “Customers and employees nowadays expect a credible anchoring of the concept of sustainability in the mission statement.”

The photovoltaic system comprises 267 modules installed over approximately 6,000 square feet, providing an output of 100 kilowatt-peak (kWp).

The energy created by the solar array provides power, in part, for the production plant, as well as for nearby energy grids in Fulda.

The solar cells are expected to reduce Uth’s greenhouse gas footprint by about 50 tons of CO₂ per year and will contribute about 30 percent of the energy needed to run the manufacturing facility.

Reworking the system

Several years ago, Uth brought to market the TRP Reworker System, which the German machine manufacturing company touted at the International Tire Exhibition & Conference in Akron last year.

The TRP Reworker System—which CERTainable noted in its recent ISO certifications for Uth—reworks unvulcanized material into further rubber processing and fine-mesh straining solutions.

The system is based on Uth’s two-roll plastifier (TRP) with an integrated gear pump, according to the company.

And the main benefactor is the environment.

“When you compare electricity consumption with classical technology in the marketplace, our machine is using one-third of the energy,” Manuel Bessler, Uth general manager of sales and project management, told *Rubber News* at ITEC.

The system combines gentle processing based on an open-roll system, using cracking, homogenizing and discharging.



Our Oct. 2 print issue will focus on sustainability and recycling.



Uth invested \$106,000 in a solar array, which began generating power for its plant and surrounding community of Fulda, Germany, in February 2022.

AirBoss' sales rise slightly, earnings fall in Q2

By **Andrew Schunk**
Rubber News Staff

NEWMARKET, Ontario—AirBoss of America Corp. saw its share of challenges in the second quarter of 2023, as work force issues, logistical hurdles, raw material availability and global conflicts continue to impact the industry landscape.

But the company remains confident moving forward, leaning on its awarded and future contracts (AirBoss Molded Glove and the Bandolier line charge system) to offset these economic headwinds, as well as a general rebound in the rubber solutions and defense group segments.

Overall, AirBoss saw net sales of \$114.1 million for the second quarter of 2023, a 3.2-percent increase over the \$110.5 million registered in the second quarter of 2022. Net sales in Q1 2023 came in at \$117.1 million.

The year-over-year increase was due to higher sales and volume in AirBoss Engineered Products, though AirBoss Rubber Solutions partially offset the increase with lower volume.

“AirBoss experienced stable consolidated sales levels and volume recovery in certain segments as compared to last year, however an unfavorable product mix and elevated operating expenses had a negative impact on profitability for Q2 2023,” said Chris Bitsakakis, president and co-CEO of AirBoss, during an Aug. 10 conference call. “From a market demand perspective, some of the improvements we saw toward the latter part of Q1 2023 continued through this quarter, but customer volumes remained below those experienced in 2022, especially within (AirBoss) Rubber Solutions and AirBoss Defense Group.”

Overall, AirBoss Group EBITDA dropped

more than 50 percent to \$5.2 million in Q2 2023, against an EBITDA of \$10.5 million in the second quarter of 2022.

“The decrease in EBITDA (from Q2 2022) arises primarily from higher operating expenses,” Bitsakakis said.

Year-to-date, AirBoss saw net sales of \$231.1 million, a 9.4-percent decrease against the \$255 million the company registered in net sales in the first six months of 2022. EBITDA for the first half also decreased nearly 50 percent to \$15.5 million.

AirBoss' debt decreased by about \$14.6 million in the first half of this year to \$128.3 million, down from \$143.6 million at the end of 2022.

“During Q2 2023, AirBoss remained focused on operational execution, growth initiatives and key investments despite continued economic headwinds,” Bitsakakis said. “The company navigated ongoing economic impacts being experienced to varying degrees in each segment. Labor, logistics challenges and the availability of raw materials continue to create challenges that each segment is working through to support stability moving forward.”

“Recovery in volumes in 2023 remains subject to the ongoing management of stable and sustained operations of businesses globally, which remain complex and volatile.”

AirBoss Engineered Products leads the way

For the second quarter of 2023, AirBoss Engineered Products sales rose 40.3 percent to \$37.7 million over the second quarter of last year, due to a favorable mix and high volumes in SUV, minivan and light truck platforms—and despite headwinds impacting production schedules across OEMs and Tier 1 suppliers.

“The momentum generated in the prior quarter continued through this quarter, despite ongoing challenges of raw material availability, supply chain challenges and production volatility by the original equipment manufacturers,” Bitsakakis said.

Revenues for AirBoss Rubber Solutions fell 8.5 percent—to \$57.8 million from \$63.2 million—for the quarter, against the second quarter of 2022.

Volume in ARS dropped nearly 19 percent against the second quarter of 2022.

“There were decreases across a vast majority of sectors due to decreased momentum at most customers' operations, although there was some traction from the softness experienced in the prior quarter,” Bitsakakis said. “The rubber solutions segment saw modest improvements in demand during the quarter, and while it was a marked improvement over the prior quarter, it was still below the same quarter in the prior year.”

Despite the economic pressures, Bitsakakis said rubber solutions “continues to execute on its strategy of delivering strong results with specialty products and fulfilling new business through identified synergies and margin expansion.”

He added that the company will look to expand the portfolio of Ace Elastomers and its specialized products within AirBoss Rubber Solutions.

AirBoss Defense Group experienced a “challenging quarter,” Bitsakakis said, as sales ticked up slightly to \$26 million for this year's second quarter. A modest increase in volume for molded defense products assisted

in this slight net sales increase, AirBoss said.

However, ADG was down about 40 percent year-to-date—\$54.6 million from \$89.8 million—against the first six months of 2022. This is “primarily due to the completion of the large HHS nitrile examination glove order,” AirBoss said.

“ADG experienced residual softness in its industrial and defense businesses, making for a challenging quarter,” Bitsakakis said. “As a result of this and the delay in converting opportunities, ADG has taken a series of cost-cutting measures across the organization, including a reduction in its work force.”

In addition, ADG continues to leverage opportunities in its pipeline, as evidenced by the recent awards of the AirBoss Molded Gloves and Bandolier contracts.

The AMG contract is worth about \$18.5 million over three years, while the Bandolier contract is worth about \$3.8 million over 12 months.

However, delayed conversion of a pipeline opportunity in another contract remains, as the previously announced awards for Husky 2G vehicles has been delayed further due to “ongoing global challenges.”

AirBoss now expects these orders to be executed in early 2024.

Moving forward, AirBoss will look to grow its core ARS segment though “defensible leadership positions in selected compounds.”

Within ADG, the company will look to capitalize on “broader survivability solutions” serving both the defense and first responder markets.

And the group hopes to continue the growth seen in AEP through a combination of “disciplined cost containment, client relationship expansion, new product development and sector diversification,” Bitsakakis said.



Bitsakakis



ARDL Breaking the Mold

ARDL is known for our testing and technological innovation. However, we are also a leader in equality. With women represented at every level, from president to technician, we truly stand apart in the rubber, plastics, and testing industries. We are proud to showcase Chelsye Dailey, Engineering Manager, Melissa Martin, Physical Testing Manager, and Tiffany Heller, Pharmaceutical Services Manager.

TECHNICAL SERVICES

- Compound Development
- Failure Analysis
- Technical Training
- Prototyping
- Technical Consulting
- Expert Witness/Testimony

MECHANICAL SERVICES

- Physical & Mechanical Testing
- Dynamic Testing
- Custom Test Design
- Engineering Consulting
- Rubber and Plastics Mixing
- Rubber and Plastics Molding

CHEMICAL SERVICES

- Chemical & Analytical Testing
- Formula Reconstruction /Reverse Engineering
- Microscopy
- PPE Testing
- Pharmaceutical & Microbiological Services



ARDL
Akron Rubber Development Laboratory, Inc.
A Passion for Problem Solving

FROM **CONCEPT** TO **PROTOTYPE**

2887 GILCHRIST RD., AKRON, OHIO 44305

TOLL FREE 866-780-ARDL

WORLDWIDE 330-794-6600

FAX 330-794-6610 ARDL.COM in  

CONTACT OUR EXPERTS TODAY at ANSWERS@ARDL.COM



University partnership gives American Nitrile edge in gloves

By Dan Shingler

Crain's Cleveland Business

GROVE CITY, Ohio—Down near Columbus, a huge new manufacturing plant is being built that promises to claw back some of America's competitiveness in a key high-tech, international industry that has become dominated by Asia in recent decades.

This isn't about Intel. This is a story about American Nitrile L.L.C. in Grove City, which makes PPE gloves. The sort of gloves that were so hard to get during the pandemic that they shot up to as much as 20-times their previous cost, if you could find them. The kind of gloves that also will continue to be used by the billions in the U.S., even in times of relatively good health. And gloves that might incorporate technology from the University of Akron and other Northeast Ohio entities to be smarter and more useful than gloves are today.

"Why is the U.S. 100-percent dependent on Asia for its PPE?" asked Jacob Block.

He's the man who has made this all happen. He got the idea for it after working for East Coast venture funds involved with medical equipment and brokering PPE in the early days of the pandemic with connections and pathways he'd established.

Block is the guy who—with more than a little help from his assembled team and people including Jim Hull of Summit Glove in Minerva—figured out how to set up a plant with nearly 50 miles of continuous-process glove production lines running inside a giant former Pier One warehouse, with more to be installed.

He's also the guy who raised around \$180 million in equity, debt and state funding to turn the entire thing into a reality. It's already churning out thousands of gloves a minute, this very minute, with production lines that run 24/7, 365 days a year.

Those lines are amazing, even to someone like Hull, who is president of Summit Glove and has been around the industry since he was a kid.

Over the years, Hull said he

has seen more than 30 glove companies in the region shut down in the face of Asian competition. But they never had an operation like American Nitrile and the size needed to compete like Block does, he said.

"Jacob's lines are 800 feet long, and each has a mile-long chain. ... They're incredible," which makes the Grove City plant among the larger plants anywhere, Hull said.

Block gave a tour of the plant, and the production lines are impressive. They run from one end of the plant to the other in rows, feeding packaging stations at one end. Each line is three stories high, with a chain of ceramic hands that go back and forth for a mile before they complete their journey. Along the way they are dipped, cured in ovens, their cuffs are rolled for removal and they are completed without flaws, removed and packed in cases of 1,000 gloves each, all on a highly automated system.

The system needs to be automated for the company to succeed, Block said. In terms of competing with Asia, American Nitrile has an advantage when it comes to energy costs, about the same material costs as its overseas competition, and higher labor costs. It will need to produce its gloves with less labor than its competitors to match or beat their prices, he said.

It's also a matter of scale, which is why American Nitrile's plant is so large—and why Block hopes to open more plants once this one is fully developed. He said he also might get a boost in the future, too, if the U.S. starts producing nitrile rubber domestically with projects now underway.

The Grove City plant currently has six, mile-long production lines in operation, two more about to come online and then another four that will be installed soon after.

Each line produces 25 million gloves per month.

That sounds like a lot of gloves, but compared to how many are used in the U.S., it's not even a breath of mist across the top of the bucket, say both Block and Hull. Block figures his plant, at full size,

will only be making a small fraction of the gloves used in the U.S.

At full production with 12 lines, Block's plant will produce a little more than 3.5 billion ambidextrous gloves per year. While that seems like a lot, Hull said that's still only about 2 percent of total U.S. demand.

Don't believe it? You might think you don't use nitrile gloves, or perhaps that you only use a few each year handling petroleum products or chemicals at home.

Think again.

Every time a dentist, doctor, nurse, phlebotomist or other medical professional works with a patient, they put on gloves. Often, they wear more than one pair. So, in a single, routine trip to the dentist, you might create demand for two to six pairs of gloves. A doctor's visit might require more and the number goes up quickly for longer and more complex medical applications and for folks who see providers regularly for chronic conditions.

Block hopes to make more nitrile gloves than one plant can produce, but first he's focused on completing the Grove City plant and beginning to build market share, he said.

He's getting help from Akron and its eponymous university, which has played a role in American Nitrile getting off the ground with engineering help from its polymer schools thanks to an introduction by Barry Rosenbaum, a senior fellow at the University of Akron Research Foundation.

Rosenbaum connected Block to, among others, University of Akron professor and researcher Sadhan Jana. He and others at the school are working with American Nitrile and Ohio Penal Industries on a program that uses the university to provide associates degrees to people in Ohio prisons, and Block has said he'll hire about 50 of those students for his plant.

But Jana thinks the university can do much more work with American Nitrile, not only to help it continuously improve its product and processes, but ultimately to revolutionize the gloves entirely.



Gloves on their one-mile journey from dipping to boxing at American Nitrile L.L.C. in Grove City, Ohio.

"A glove needs to be smarter," Jana said. "It can expand its functions beyond what people are immediately thinking about."

How can a glove be smart? Jana has lots of ideas for that, but some of the first smart gloves will likely be able to detect certain chemicals or drugs, he said.

For example, maybe a police officer or EMS worker would have gloves that turn a different color when exposed to fentanyl, or even turn different colors depending on which drug or chemical they touched. That's also in keeping with work done by others. The university's Abraham Joy has invented technology that can be applied to wipes, enabling them to detect opioids.

Block, who already employs 15 engineers, including four chemical engineers, said he looks to Akron for technical help, engineering hires and ideas. He said he's excited about some of the technologies Jana discussed with him and said American Nitrile plans to use them.

"We absolutely plan to manufacture it," Block said of a drug-detecting glove. "It's just a question of when the technology will be ready."

Hull hopes to make further contributions as well. He's hoping American Nitrile also will get into surgeons' gloves, which unlike most medical nitrile gloves, are hand-specific to offer more dexterity. They also cost a bit more and have a slightly better margin, Hull said.

Hull already has contributed a new hand mold to American Nitrile, in exchange for a small amount of equity in the company,

he said. Block said those molds, patented by Hull, provide more finger dexterity than competing gloves, giving him another competitive edge.

Hull said he can help more, if needed, and is more than willing.

"We have more than 50 patents," he said of Summit Glove.

Block said he's grateful for all of the local support he's gotten so far. A Columbus native, Block moved from the New York City area to start his company here because he thought he would be close to the expertise and support he'd need to succeed.

He's gotten it, too, he said. The state has helped, with a JobsOhio grant of \$3.5 million. Hull has been more than generous with his time and expertise, and the University of Akron is proving valuable as a source of both technology and worker training, Block said.

It's all in keeping with what drove Block to do this in the first place, when the U.S. found itself short on gloves and other PPE in the pandemic.

"There's no reason PPE can't be manufactured here," he reasoned then.

Block said he's not quite done hiring for the Columbus plant, which currently employs about 150 people.

That number will go up to about 200, but probably no higher, he said. More people will be needed for new production lines, but fewer will be needed for packaging as that function is further automated, he said.

Then he'll start exploring opportunities to open a second plant.

"We're just scratching the surface here," Block said.

Trendco's \$43M plant to bring 292 jobs to Alabama

Rubber News Staff

TUSKEGEE, Ala.—A logistics hub in Alabama is where yet another nitrile glove manufacturer aims to increase the domestic supply of critical PPE in the U.S.

Columbia, S.C.-based Trendco USA is investing in Tuskegee, where it plans to launch a \$43 million glove manufacturing operation and create 292 jobs over five years at a facility in the new Regional East Alabama Logistics (REAL) Park, according to an Aug. 9 news release from Gov. Kay Ivey.

Trendco, an "early-stage" company that produces medical-grade examination gloves in Louisiana through a partnership with another company, plans to install as many as 10 glove production lines at the REAL Park facility. And once the lines are established, the manufacturer plans to expand production into



Trendco USA plans to establish a \$43 million nitrile medical exam glove manufacturing operation in Tuskegee, Ala. The operation will be located in Building 100 (pictured) of the new Regional East Alabama Logistics (REAL) Park.

masks and gowns.

The operation will be located in an existing 168,000-sq.-ft. facility and rep-

resents "the catalyst project" for the 700-acre industrial park, according to the governor's office. Trendco has signed a lease for 100,000 square feet of the facility, where it initially will set up a distribution operation as it prepares to launch glove production.

Greg Canfield, secretary of the Alabama Department of Commerce, said the glove plant "validates the vision to move forward with ambitious development plans for REAL Park," noting the benefits of the park's proximity to a major interstate highway.

"The park is perfectly positioned to capitalize on the growth of the I-85 corridor, and I believe other companies will be putting down roots there in the near future," he said.

After considering sites in Georgia and the Carolinas, "... Trendco decided to locate its manufacturing facility in Tuskegee, and I am confident the company made the right choice for its investment project," Ivey said. "I look forward to seeing the company grow and thrive here in Alabama."

Trendco CEO Darryl Hunter said Tuskegee and the surrounding communities "will play a vital role" in the company's success.

The Macon County Commission, Macon County Economic Development Authority and other local institutions are supporting the Trendco project with utility upgrades and an industrial access road at the site worth \$1.1 million and other in-kind services. AIDT, the state's primary work force development agency, also is providing services to advance the project.

Cabot weathers tough Q3, optimistic for months ahead

By Erin Pustay Beaven
Rubber News Staff

BOSTON—Headwinds are to be expected. And they are, of course, familiar: lower volume demands, inflation and lingering effects of COVID-19 and its resurgences.

Cabot Corp. has faced plenty of familiar headwinds throughout its 2023 fiscal year, and it continues to navigate the challenges, CEO and President Sean Keohane told investors during the company's third-quarter earnings call Aug. 8.

And while the fiscal year hasn't quite met expectations with its weakening global demand and somewhat disappointing sales, there are signs of hope on the horizon, particularly for the Reinforced Materials segment, which feeds the replacement tire and automotive OE markets.

The company's third-quarter net sales and net income each showed year-over-year declines, with net sales dropping by \$181 million to \$968 million for the period. Net income for the quarter was \$82 million, down \$15 million from same period one year ago.

For the nine months ended June 30, net sales totaled \$2.96 billion, down about \$243 million year-over-year. Net income, meanwhile, was up \$96 million year-over-year to \$211 million for FY23.



Keohane

"In our third fiscal quarter, we continued to navigate a challenging macroeconomic environment. Despite lower volumes in both segments and tax headwinds, we delivered sequential earnings improvements due to the continued strengths of the reinforcement materials segment," Keohane told investors. "Consistent with the commentary in our June announcement, we continue to see weakness in China and soft demand on a global basis across many of our key performance chemicals end markets, particularly in the housing and construction sector and across consumer durable applications."

'Strengths of Reinforced Materials'

The Reinforced Materials segment, Keohane noted, "delivered a record quarter" for the three-month period ended June 30. EBIT came in at \$132 million, an increase of 17 percent from the \$113 million one year ago. The segment also saw an 8-percent gain in EBIT sequentially.

"This level of performance reflects the resilient nature of this business and the structural improvements we have made over the last several years."

Sean Keohane

For the nine-month period, Cabot's Reinforced Materials Segment has recorded EBIT of \$384 million, an improvement of about \$49 million year-over-year.

And these improvements came even as global third-quarter volumes for the segment declined 8 percent year-over-year. In the Americas, demand dropped 10 percent, while Asia saw a 5-percent decline. Demand across Europe, the Middle East and Africa fell by 12 percent for the quarter. "This level of performance reflects the resilient nature of this business and the structural improvements we have made over the last several years," Keohane said.

Moreover, he added, it looks as though the stars are aligning for growth in the segment, which is driven primarily by the replacement tire end-market that accounts for 63 percent of the segment's sales. Globally, the replacement tire market has been down, a direct result of a destocking cycle.

"When we look at the industry demand fundamentals, we see pretty stable conditions," Keohane said. "For the passenger car replacement market, miles driven and the global car parc are generally good indicators for light vehicle replacement tire demand. For example, passenger miles driven are holding steady, while the global car parc continues to expand."

Cabot also is encouraged by the potential for growth within the truck and bus tire segment.

"For the truck and bus segment, truck tonnage is a good indicator of underlying health, and we can

see in the U.S. that this, too, is holding steady," Keohane said. "The performance of these fundamental demand drivers give us confidence that volumes will normalize when we exit the current destocking cycle."

Further encouragement is coming from auto manufacturing, which continues to show signs of growth as it works to transition to new mobility. And that's especially good news for Cabot, which draws about 27 percent of its Reinforcement Materials business from the end market.

"This end market has experienced growth in recent quarters and is projected to grow in 2023, providing some offset to the lower replacement tire volumes," Keohane said. "The impact of a pick-up in auto production in this segment is seen very quickly, given the relatively shallow value chain as compared to the replacement tire market."

Challenges ahead for Performance Chemicals

The Performance Chemicals segment is likely to face some continued headwinds as Cabot rounds out its fiscal year in the coming three months.

Cabot's Performance Chemicals segment recorded a third-quarter EBIT of \$32 million, down \$31 million year over year. For the nine month period ended June 30, segment EBIT is down about \$96 million, to \$89 million.

Sales within the segment also



have declined slightly. For the quarter, Performance Chemicals recorded \$307 million in sales, down \$69 million from the year-ago period. For the nine months, sales are down about \$126 million year over year, coming in at \$919 million for FY23.

"In Performance Chemicals, the external environment remains challenging," Keohane said. "Most of our industrial sector end-markets are experiencing weak demand, particularly housing and construction. And on the consumer application side, we have seen that demand for durable goods and electronics has also been weak."

As with the Reinforcement Materials segment, the Performance Chemicals segment is positioned for growth as auto manufacturing continues to pick up. That's a good thing for Cabot, which draws about 25 percent of its Performance Chemicals business from the transportation original equipment sector.

So while Cabot is encouraged about its potential for growth as the "lingering destocking" period comes to a close, Keohane noted that it will take about six to nine months for the company to fully feel the benefits of the recovering OE industry.

"Historically, this has taken about two to three quarters to see the turn in auto production translate into higher demand for

our products," Keohane said. "As this happens, we would expect a lift in terms of both volumes and product mix, as the automotive sector pulls through a high percentage of specialty grades."

Battery materials, which early this year proved to be a bright spot for Cabot, continued to show promise throughout the third quarter, experiencing 29-percent sequential growth and 50-percent growth year-over-year.

With all that good news, though, is a caveat.

Yes, Keohane said, China's EV market is growing rapidly and creating opportunities for Cabot's battery materials. At the same time though, OEs are competing for the precious price points to gain an advantage in the market. And those pressures are "flowing back up stream to battery producers and material suppliers."

"As we transitioned into Q4 and look forward through the balance of the fiscal year, we have experienced pricing pressure that is impacting our margin. The impact is concentrated in our China business, and particularly where our products are sold into batteries for lower-priced domestic vehicles," Keohane said. "Where our products are sold into batteries for export to global OEMs or to customers outside of China, we are seeing stable prices."

TOUGH QUESTIONS, SPECIAL APPLICATIONS, TIGHT DEADLINES? CALL RENKERT OIL.

Count on expert consulting, creative solutions and quality oils offered at competitive prices. Plus, our multiple terminals translate to quick delivery.

Why choose oils from Renkert?

- ✓ Clear, water white process oils with viscosities from 30 to 600 SUS @ 100F
- ✓ Excellent compatibility with rubber polymers
- ✓ Low volatility
- ✓ Low UVs

For sensitive applications, we manufacture USP direct food contact grades.



Contact us today for an expert assessment of your oil application.

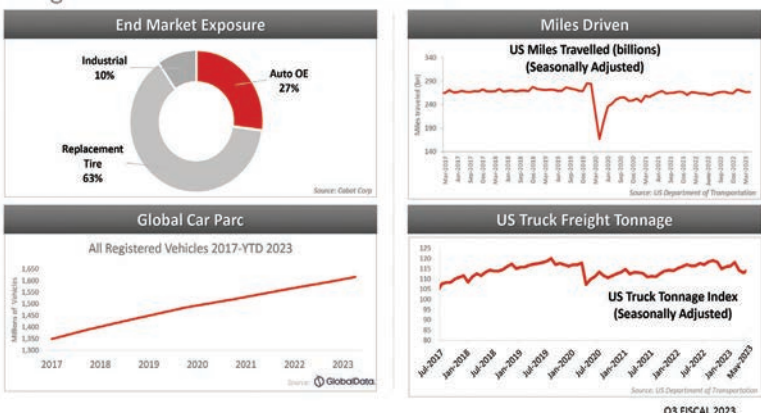
1 (800) 423-6457 www.RenkertOil.com



Authorized distributor for Chevron Process Oils

Reinforcement Materials Market Update

Long term demand drivers remain solid



Cabot sees encouraging trends in end markets that support the Reinforced Materials Segment.

Opinion

Women make progress in rubber sector, but still long way to go

As rubber industry journalists, our job is to reflect the stories of the industry—even those that aren't often told. And our inaugural class of Women Breaking the Mold is proof of just how encouraging and inspiring those untold stories can be.

Among the honorees are veterans with 45 or more years in the rubber industry, along with others still in the infancy of their careers. The individuals bring their unique perspective on how they see our business, why they chose it as a career and what they see in their future.

The stories truly are inspiring. There are company owners and CEOs, plant managers and operation executives, along with marketing and sales officials.

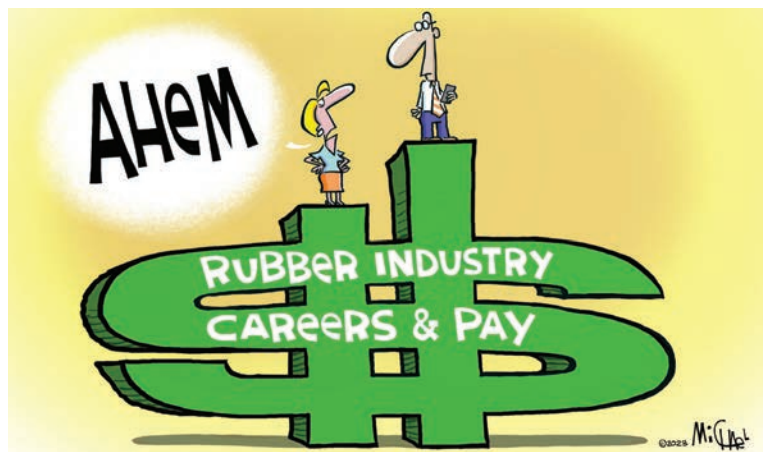
One bought a company when she was 21 after working there just a year. The business had three employees at the time, and now boasts around 50.

Another owns a firm in the “macho society” of Medellín, Columbia, after pulling the company back from the brink of bankruptcy due to embezzlement and internal theft.

And still another grew up in the former Soviet Union and was made to study elastomer science. But because of excellent teachers and mentors, she fell in love with rubber, moved to the U.S. with her family and is more than a half-century into her rubber industry career.

But while there are examples of glass ceilings being shattered, there is evidence that progress has been slower than hoped for. For every conference where there are growing numbers of women on hand, there are others where among 150 attendees, you can count the female attendees on one hand.

Even more telling is that pay data from the Bureau of Labor Statistics illustrates some distressing trends. The salary gap among workers in the U.S.—the statistics aren't exclusive to rubber—actually grows the older people get. Women are closest to wage par-



ity between the ages of 25 and 34, when most are just beginning their careers. At this time, they make 90.6 percent of what men in the U.S. earn overall.

But as workers age, the BLS statistics grow more grim. For workers ages 45 and older, females make roughly 77-78 percent of what males bring home. That is a clear indication that men are advancing further up the corporate ladder, gaining the lion's share of the promotions in the managerial tiers, and still dominate the C-suite positions that bring the big salaries.

Even with these statistics, however, it's hard not to have hope for progress when listening to this class of honorees.

Their advice? Question the status quo. Be persistent, and let those in charge know where you want to go in your career. If you feel you or your ideas aren't being respected, have evidence ready to back up what you are proposing and, if that doesn't work, recruit others to help you make your case.

It's encouraging that many of them pledge to “pay it forward” by advocating for the advancement of women. Others are helping to recruit more women into STEM careers by sharing their stories and proving why the tire and rubber industry is a good place to build a satisfying career.

With standard bearers like this group, even the biggest pessimists have to see better days ahead.

Viewpoint

IEC returning to Cleveland

By Lakisha Barclay



My favorite time of year is upon us: fall! It's sweater weather, back to school shopping, and of course the International Elastomer Conference. IEC is the one and only place where all facets of our industry come together to learn, connect and grow. We are very excited to bring IEC back to Cleveland this year.

Cleveland served as the anchor host city in most of the odd numbered years from 1975-2019. We experience strong participation from attendees and exhibitors when in Cleveland, and our conferences there have always been successful for all involved. Roughly 60 percent of U.S. rubber companies are within a day's drive, the convention center features a perfect layout for our conference and the city provides numerous dining and entertainment options for our attendees. It truly is a great city, and we look forward to welcoming all to IEC 2023 Oct. 16-19.

The staff and I are hard at work getting the final details in place for our attendees, exhibitors, sponsors, speakers and members to have a great experience during IEC. We want to ensure that you have an opportunity to learn about the latest research, developments and products/services in the industry, and connect with new and old friends to grow your network and professional skill sets.

Although we are a small staff of eight, we have the power of our wonderful volunteers behind us. Special thanks to

all the committee members, board members and unseen worker bees behind the scenes. We appreciate your commitment to the ACS Rubber Division and to our industry. We couldn't do it without you. Stop by our Get Involved session at IEC if you would like to learn about volunteering. We have a spot for you.

If this is your first time attending IEC, make sure to stop by the Rubber Division booth to meet the staff and volunteers and learn all that IEC and the association has to offer you personally and professionally.

Highlights of IEC 2023 include:

- 200 Companies/organizations exhibiting at the expo;
- 113 Presentations at the Technical Meeting;
- 15 courses/training sessions to learn from at the Educational Symposium;
- Business-focused keynote and plenary sessions;
- Career development sessions, young professionals events and student-focused events;
- Regulatory and legislative panels and updates; and
- Women's event, networking events and more.

Visit rubberiec.org to learn all about what we have in store for you at IEC 2023. We hope to see you there.

Barclay is executive director and CEO of the Rubber Division of the American Chemical Society.

Online

Check out our website at rubbernews.com

INSPIRING WOMEN: Get to know each of our Women Breaking the Mold honorees with full profiles and Q&As, available online.

MORE NEWS, MORE INSIGHTS: Every day, our staff brings you news and insights along with our sister publications at *Tire Business*, *Plastics News* and *Automotive News*. There's far more than fits in print. Online subscribers get it all.

Other online content:

STORIES • VIDEOS • PHOTOS • NEWS • BLOGS • NEWSLETTERS

Quote of the week

“Don't be afraid to put yourself out there. Throw your work boots on and work the floor with the men who may have doubts. And bringing in donuts occasionally doesn't hurt.”

— Amanda Cool, supervisor and test engineer in Smithers' chemistry lab and tire service department

Rubber News

Vol. 52 No. 3

KC Crain, CEO

Chris Taylor, Vice president and general manager, Global Polymer Group

EDITORIAL STAFF

Bruce Meyer, Editor

330-865-6124 • bmeyer@crain.com

Erin Pustay Beaven, Managing editor

330-865-6106 • ebeaven@crain.com

Andrew Schunk, Reporter

330-865-6115 • andrew.schunk@crain.com

Sam Cottrill, Online content editor/reporter

330-865-6104 • sam.cottrill@crain.com

Michael McCrady, Art director

330-865-6148 • mmccrady@crain.com

Robin Clark, Editorial researcher

330-865-6123 • robin.clark@crain.com

John Dick, Technical editor

john@rubberchemist.com

Don Loepp, Editorial director

dlopp@crain.com

Erin Sloan, Audience engagement editor

esloan@crain.com

ADVERTISING

Christine Zernick, Sales director

330-865-6108 • czernick@crain.com

REGIONAL MANAGERS

Tony Antolini

917-705-8252 • tony.antolini@crain.com

Peter Bianchi

312-265-6484 • pbianchi@crain.com

Linda Hickey

330-592-4857 • lhickey@crain.com

Diane Owen

313-446-0445 • dowen@crain.com

Christine Kazimer, Inside sales/Classified sales

216-409-9463 • christine.kazimer@crain.com

EVENTS & INTEGRATED MARKETING

Jacqueline Bao, Senior events manager

jacqueline.bao@crain.com

Joe Pryweller, Director, conference and event content

330-212-3731 • jpryweller@crain.com

DeShonta Dupree, Senior events coordinator

248-943-9561 • deshonta.dupree@crain.com

Katherine Hampson, Marketing manager

+44 (0)7976 222256 • khampson@crain.com

Quincy Smith, Digital campaign specialist

quincy.smith@crain.com

Meaghan Crawford, Email marketing specialist

313-446-1652 • mcrawford@crain.com

Lindsay Crawford, Trade show coordinator

313-446-5869 • lcrawford@crain.com

Hadi Shehadeh, Graphic designer

313-446-0425 • hshhadeh@crain.com

IT/PRODUCTION STAFF

Simone Pryce, Media services director

Paul Vaccari, Media services manager

Anthony DiPonio, Chief information officer

AUDIENCE DEVELOPMENT

Veebha Mehta

Chief marketing officer

212-210-0725

EXECUTIVE OFFICES

2291 Riverfront Pkwy, Suite 1000, Cuyahoga Falls, Ohio 44221. Phone: 330-836-9180;

Editorial fax, 330-836-2831; Sales,

administration fax: 330-836-1005

Subscriptions: U.S., one year \$109; two

years, \$178. Group rates, \$79 each for five or

more copies. Air mail and first class delivery to

U.S., U.S. possessions, Mexico and

Canada, \$164; the Middle East and Europe,

\$219; all other regions, \$293. For surface

delivery to Canada, \$138 (including GST);

Mexico and all other foreign countries, \$140.

Single copy, \$4.50. GST #136760444.

Printed in the U.S.

For new subscriptions and change of

address, write: Audience Development

Department, Rubber News, 1155 Gratiot

Ave., Detroit, Mich. 48207-2912; call 1-877-

320-1726 or e-mail customer-service@crain.com.

com for customer service. For subscription

information and delivery concerns please

email customer-service@crain.com or call

877-320-1726 (in the U.S. and Canada) or

313-446-0450 (all other locations)

REPRINTS

Lauren Melesio, Reprint account executive

212-210-0707 • lmelesio@crain.com

Website: <https://www.rubbernews.com>

CRAIN COMMUNICATIONS

Keith E. Crain
Chairman

Chris Crain
Senior executive
vice president

KC Crain
President & CEO

Robert Recchia
Chief financial officer

Mary Kay Crain
Vice chairman

G.D. Crain Jr.
Founder (1885-1973)

Mrs. G.D. Crain Jr.
Chairman (1911-1996)

Alliance for
Audited Media

AMERICAN
BUSINESS MEDIA
The Association of Business Media Companies

Goodyear to cut jobs as EMEA restructure unfolds

European Rubber Journal

BRUSSELS—Goodyear is aiming to streamline its operations across the Europe, Middle East and Africa region, and the plan could save the tire maker as much as \$100 million.

Goodyear said Sept. 5 that it would cut as many as 1,200 jobs in the EMEA region as part of its broader, previously disclosed restructuring aimed at more efficient operations.

The proposed changes include streamlining the EMEA region around two business units—consumer and commercial, Goodyear told *European Rubber Journal* recently. The staff reduction represents about 15 percent of the business unit's salaried employment.

Goodyear also emphasized that it plans to create 500 new roles, "principally in its

existing shared services organization in Romania."

Combined, these measures will result in an overall net reduction of 700 salaried positions, according to the Akron-based tire maker.

According to a Sept. 8 SEC filing, the tire maker noted that the job cuts would be made across multiple countries within EMEA.

Goodyear expects the actions to result in significant annual savings. Beginning in 2024, it expects to see savings at around \$30 million to \$35 million. By 2025, when the actions are fully implemented, job reductions could result in around \$50 million to \$55 million.

Overall, Goodyear expects a saving of

\$5 million in 2023, while "the total expected savings from a 2022 baseline will amount to nearly \$100 million."

Goodyear expects to incur total pre-tax charges of \$210 million to \$230 million associated with the restructuring measures.

Richard Kramer, Goodyear chairman, CEO and president, signaled in July that "major cost-saving changes" were ahead in Europe and other regions. Kramer indicated that EMEA was a particular focus of the cost-savings actions, as the region has suffered operating losses for three consecutive quarters, including a loss of \$19 million in the second quarter on 10.4-percent lower sales.

The operating ratio for fiscal 2022 was just 1.1 percent—segment operating income of \$61 million on \$5.65 billion in sales.

Goodyear recently announced a plan to halve capacity at its tire plant in Fulda, Germany. That move, which would involve 550 job losses, is intended to reduce consumer-tire production costs in the region. It should deliver \$30 million in annualized segment operating income benefits by mid-2024.

Goodyear stated in its second-quarter earnings report that its goal in the EMEA is to reduce its consumer tire conversion cost by roughly \$3 per tire over the coming five years from a 2022 baseline.

During the fourth quarter, Goodyear said it will provide further details about its broader, group-wide plan to improve its global competitiveness and drive growth.



Fire disrupts Goodyear tire plant in Poland



Goodyear said all its associates are safe and uninjured after a fire at its plant in Debica, Poland.

European Rubber Journal

LONDON—Tire production at Goodyear's manufacturing plant in Debica, Poland, has been disrupted following a fire that broke out at the factory Aug. 20.

Due to "swift and decisive action," the blaze at the Polish factory was put out on the same night, Goodyear said in a Sept. 4 written statement to *European Rubber Journal*.

The plant area dedicated to truck tire production at Debica was not impacted by the fire, and production is ongoing without any disruptions.

"We are currently in the process of

assessing the losses and estimating their impact on specific product codes," Goodyear said, noting that "some consumer tire production resumed on Aug. 22."

Goodyear said all its associates are safe and uninjured and that its leadership team was collaborating with local authorities to investigate the cause of the incident.

According to *Rubber News'* Global Tire Report, the Debica plant has a nameplate capacity to produce 48,000 units per day of passenger car/light truck, truck/bus, agricultural and industrial tires.

WACKER

CONGRATULATIONS

WACKER would like to celebrate our four Women Breaking the Mold honorees. Thank you for making our company stronger.

Lisa Mantooh, Charleston, TN

Keri McDonald, Ann Arbor, MI

Lucy Oldfield, Ann Arbor, MI

Aisha Sheikh, Charleston, TN

Rubber News **SPECIAL REPORT**

WOMEN BREAKING THE MOLD

CLASS OF 2023

Breaking molds, inspiring an entire industry

Molds don't break themselves. But they were, certainly, made to be broken. We're proud to introduce 32 women doing just that—breaking molds, pushing through barriers and shattering glass ceilings.

They are entrepreneurs, scientists, technicians, innovators and problem-solvers, and they hail from every corner of the rubber industry. They are diverse in their skill sets, perspectives and personalities.

And every single one of them leads with the grace and tenacity our industry needs.

These women are inspiring.

They've faced challenges head-on, proved doubters wrong and discovered their greatest strengths along the way. They've chased big dreams, reimagined how they work and refused to give up. In doing so, they have left indelible marks on their co-workers, their companies and our industry.

Over the next 11 pages, you'll meet them all—the members of *Rubber News'* inaugural class of Women Breaking the Mold honorees. It is humbling to introduce each of them to you.

We hope you find inspiration in their stories and take courage from their examples. Because leading in this industry—in any industry—is rarely easy. And that is especially true for women.

Tucked into the pages ahead, you'll also find some facts, figures and perspectives that detail some of the challenges women face as they build their careers, follow their hearts and foster their passions. And it is because of women just like those featured here that things have and will continue to change.

Here's to the Class of 2023, to the molds they've already broken and the big things still ahead.

— Erin Pustay Beaven, *Rubber News* managing editor

Juliane Hefel

General manager, PPG Specialty Coatings and Materials

Empowering others, inspiring others, that's what Julie Hefel does. Her ability to communicate clearly and inspire confidence is what makes her an effective leader. It is also the essence behind her Women Breaking the Mold nomination.

Hefel, who holds a master's degree in language interpretation and is fluent in five languages, began her professional journey as a translator at a patent law office before shifting to a procurement role and building a 16-year career at Henkel.

In 2022, she joined PPG, taking on the role of general manager for PPG's Specialty Coatings and Materials strategic business unit. She oversees 700 employees across six manufacturing sites globally, serving end markets including tire, industrial rubber, silicone rubber and footwear industries.

Throughout her career, Hefel has found that her greatest successes are built when she learns to follow her passions. Those successes multiply when she can inspire others to do the same.

And all of that comes down to three simple things: Find your voice. Trust yourself. Tell your story.

Years with company: 1

Years in rubber industry: 1

What does leadership look like and how do you demonstrate it?

I trust by default.

Decisions should not and cannot only be made at the top. If an entire team understands what the North Star is, everyone is empowered to make bold choices. With trust comes accountability. Giving team members the freedom to operate while holding them accountable to deliver their targets is living empowerment.

Secondly, we are living in a more and more complex, uncertain and fast-paced world. Bringing diversity of thought together through teamwork and collaboration is a prerequisite to successfully navigate today's environment. I consider teamwork a key attribute of my leadership style as it creates opportunities, buy-in and ownership.

And thirdly, I am a big believer that radical transparency is crucial in leadership. Creating transparency in the workplace enables winning strategies and transformational change. It also enables teams to understand and anticipate the needs of our partners and customers to be future-ready solution creators. From manufacturing to management, every employee should have visibility and an understanding of the state of a business.

What advice do you have for those who feel their ideas and credibility are questioned?

Female leaders often need to prove themselves more than once. As an example, my



career progression in a past role took more time to reach management level than a male counterpart.

I addressed this with self-lobbying and becoming comfortable promoting my own achievements. Now, I advise others to hold firm in your expectations for career progression next steps, timing and salary.

How do you advocate for yourself and your ideas?

Credibility comes from delivering against your commitments. I see myself as a strategic risk taker. I apply this as I hold myself and others accountable for making progress and reaching goals to build trust.

I also can't emphasize enough the value of teamwork and collaboration in this context. Being willing to contribute to projects outside of your direct area of responsibility creates a unique platform to share your ideas and make a name for yourself in any company.

What do you count as one of your most significant failures? What did you learn?

By default, I'm hesitant to share information about myself. Yet, when I lived and worked in Asia, I quickly learned that this hesitation created a distance within the diverse team I was building and leading.

It was only in opening up during a team training exercise that a colleague said he finally saw a real person behind the wall. High performing teams start with trust.

Trust drives a shared consciousness and is critical for success and decision making in our high-paced world. In this experience, the foundations of trust flourished, and I have shifted the way I connect with my teams moving forward.

— Erin Pustay Beaven



Victoria Rooke

CNC machinist and team leader, Westminster Tool Inc.

At age 24, Victoria Rooke is one of the youngest, most cross-trained individuals at Westminster Tool.

Her training spans all categories of technical and professional skills in over six different complex operations, including aerospace part production, electrical discharge machining, CNC milling and manual critical inspection. Victoria joined the Westminster Tool team while still in high school as part of Windham Technical School's work-based learning program, an initiative that allows students to work part time during shop class hours throughout the year.

While Victoria still wants to be hands-on in her work, she is honing her leadership skills and striving to meet her professional goals.

Years with company: 7

Years in rubber industry: 7

How does your work challenge you?

My work challenges me by often moving around the shop to learn different areas and then having to duplicate myself through cross-training to move and elevate in the company. We have a lot of systems and processes to be able to do this, but it can be challenging at times. The goal is to be able to cross-train quickly and efficiently without losing quality and skilled work. Luckily, we have systems like our Westminster Academy that help us do that. It is an online training system that we created.

What advice do you have for

those who feel their ideas and credibility are questioned?

My best advice is there is no such thing as a stupid idea.

Ideas come from your experiences. If someone is questioning your ideas or credibility, be open to hearing why. Always ask "why" to understand their point of view.

Don't be afraid to keep the conversation open with open minds and, in return, hopefully, you can explain yourself. You also have to understand if the questioning is to help you get better or to flat out hurt you. Knowing your value is very important and understanding if other people see your value as well.

What do you count as one of your most significant failures? What did you learn?

A failure I've had was my first time training someone to duplicate myself. The training did not go well because I was stressed and felt that my information wasn't getting through to the person. Eventually, we had to stop the training because it was wasting the individual's and my time.

The failure was due to communication and planning. If I had better communication with this individual, we would have probably come to an agreement on how to move forward, and if I would have had a strong training plan, then the training would have been much more successful than it was.

This did set me back in my career progression and that was very hard for me, especially knowing that I could have done so much better.

— Patricia Faulhaber

Ellen Clunk

Chief procurement officer,
Hexpol Compounding



For 14 years, Ellen Clunk honed her leadership style into the team-oriented philosophy she maintains today.

Starting as a developmental chemist, Clunk now serves as chief procurement officer at Hexpol Compounding North America, a position she took over in 2019 just as Hexpol acquired Preferred Compounding.

With a completely new and undefined landscape in front of her, Clunk charted a path for Hexpol, its customers and its raw material suppliers.

It is a path that the company travels today, and with greater ease, due to Clunk's leadership.

"There will always be people who think they know best and are stuck in their ways," Clunk said. "You can't let them take your voice. When you feel passionately about something and know it is the right thing to do, you need to stand firm and not back down. 'Persistence does pay off.'"

Years with company: 14
Years in rubber industry: 14

What drew you to the rubber industry, and what has made your career in the industry rewarding?

I fell into the rubber industry during a very tough job market. I left a job in the plastics industry to move to Northeast Ohio for my husband's job. I needed a job, and when the Hexpol Middlefield development chemist position was offered to me, I took it not knowing what I was getting into.

I had no idea how much I would love

working in the rubber industry and the relationships I have developed is what keeps me here. I also never envisioned leaving the technical side of the company, but through various opportunities provided by Hexpol, I have moved into my current role and find this side of the business really enjoyable.

What advice do you have for those who feel their ideas and credibility are questioned?

There will always be people who think they know best and are stuck in their ways. You can't let them take your voice. When you feel passionately about something and know it is the right thing to do, you need to stand firm and not back down. Persistence does pay off.

What do you count as one of your most significant failures? What did you learn?

While not necessarily a failure, the years 2020-22 were incredibly difficult in the supply chain arena. It was especially challenging for me as I had recently been promoted to a new leadership position and did not have the answers or solutions everyone was demanding. I felt as if I was constantly failing; it was true baptism by fire.

Reflecting now, I know I would never be where I am now without having to go through that. I am so much stronger and confident after making it through those years.

—Andrew Schunk

Marjolein Groeneweg

Global marketing director, synthetic rubber, Synthos S.A.



She thought by this point in her career there would be no difference between males and females in the workplace. While acknowledging the pessimism she is feeling, Groeneweg isn't without hope. She sees female leaders in Synthos—many of them from Eastern Europe—having each other's backs. And when she thinks of a recent discussion her 18-year-old son shared with her, that makes the Synthos exec think better about the future.

Years with company: 24
Years in rubber industry: 3

What advice do you have for those who feel their ideas and credibility are questioned?

When someone feels that their ideas and credibility are being challenged, I think it is important to take a step back and evaluate the situation. The most important questions are whether this is structurally the case or limited to specific issues or situations. Is it just you, or do your colleagues have a similar feeling? Finally, it is import-

Marjolein Groeneweg has been in the chemical industry for nearly a quarter of a century, the last three of those in rubber. She is happy with her position as global marketing director of synthetic rubber for Poland's Synthos S.A., but is sad that women in the industry and business haven't made more inroads in gaining gender equality with their male counterparts.

Stephenie Davis

President & CEO, Davis Industrial

While Stephenie Davis never planned to enter the rubber industry 16 years ago, she also never plans to leave it.

One year after entering the industry in sales, the Davis Industrial president and CEO bought out the company in which she started, and in the 15 years since has expanded it from just three employees to almost 50 with two branches.

Now on track for presidency within the National Industrial Belting Association's executive committee in 2026, Davis displays what it means to pull oneself up by her bootstraps.

And she's not done yet as she targets further sustainable growth for the company in order to provide more opportunities for her employees, customers and community.

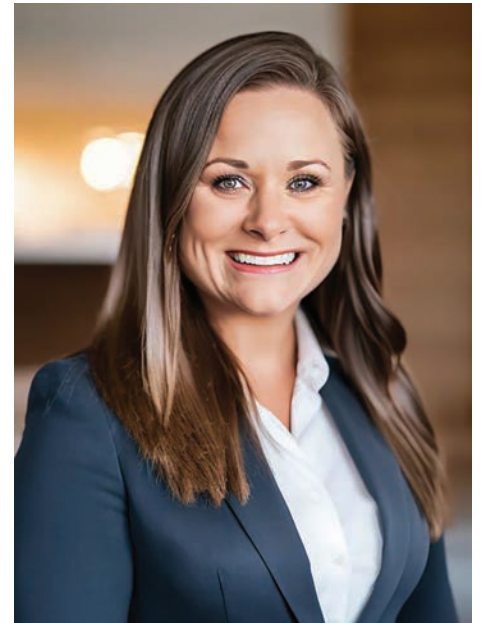
Years with company: 15
Years in rubber industry: 16

What does leadership look like and how do you demonstrate it?

I believe that leadership involves enabling others to achieve their objectives by eliminating obstacles that hinder their progress, and my primary role is to provide unwavering support and direction to my team as we strive to attain both individual and shared goals, while also fostering a collaborative environment where we, as a talented and accomplished group, mutually guide and inspire one another daily, echoing Zig Ziglar's wisdom: "You can have everything in life you want if you will just help enough other people get what they want."

What drew you to the rubber industry, and what has made your career in the industry rewarding?

I would love to tell you that I've always had a passion for the rubber industry, and I knew at a young age that this is where I wanted to be, but that wouldn't be true. At the age of 20 I was looking for an outside sales position and through my network, I landed a job at a conveyor belt service company. Prior to the interview preparation, I had no idea this industry even existed, but I could not be more grateful to be a part of such a great in-



dustry with so many incredible individuals. Working on projects and initiatives with my customers and team is a daily source of fulfillment, and the opportunity to collaborate with these sincere, modest, innovative, determined and hardworking individuals is what truly motivates me to look forward to work each day.

What advice do you have for those who feel their ideas and credibility are questioned?

My advice for those who feel their ideas and credibility are questioned is to set your goals with confidence and remain vigilant. I can relate, having faced similar challenges; after all, who purchases a company at the age of 21 without encountering obstacles?

You must be determined to push past the obstacles and negativity, let your drive propel you while remaining patient and always professional. Despite the world becoming increasingly fast-paced, relationships remain pivotal in business; learn from others and build your support network. Cultivate strong relationships and continually seek opportunities to prove yourself and your ideas.

—Sam Cottrill

DID YOU KNOW?

The U.S. Bureau of Labor Statistics reports that women hold 47% of jobs in the overall work force. In manufacturing, they hold 29% of jobs.

Source: U.S. Bureau of Labor Statistics

ant to check whether the reasons for rejecting an idea have been explained. You may not agree with the rationale, but if you take a step back and take a quiet breath, check yourself: Do you know why?

If you conclude that your reaction to all of these points is negative and you do not feel heard, I recommend finding someone who is neutral and will listen to you. Find a mentor to guide you through these situations and help you find the best way to deal with the feeling of not being heard or taken seriously. This can be as simple as helping you sell your idea more convincingly and confidently.

What do you count as one of your most significant failures? What did you learn?

I tend to compare a relationship with an employer to a long-term partnership. And as with all partnerships, there are ups and downs, but sometimes a relationship

is so fractured that it cannot be repaired, no matter how much one party wishes it could be. Even if fighting for love and mutual respect has been worthwhile in the past, sometimes the gap can become too wide to bridge.

My biggest failure is that I stayed in an organization that had changed and where I could no longer create the value I wanted to deliver to the company. I began to doubt my own abilities, and over a two-year period, I lost a lot of confidence, and I lost trust in myself.

Fortunately, I was lucky enough to join a new organization, where I realized—in hindsight—that no job (and no amount of money) is worth losing yourself over. And that's the advice I now give to anyone in a similar situation: If your best is not good enough, it's time to let go.

—Bruce Meyer



Diya Garware Ibanez

Chief executive and chairperson, Fulflex

Already a globetrotter as a teenager, Diya Garware Ibanez took a small manufacturing firm with few prospects and old equipment and grew it into an industry leader with a heavy client base in the medical and textile sectors.

As the chief executive at Fulflex, she maintained her entire staff, adapting to support PPE needs seemingly overnight when the COVID-19 pandemic took root. And that should come as no surprise, as Garware Ibanez has always been quick to act when she saw a need, whether that was related to her business or a charitable cause near and dear to her heart.

Years with company: 29
Years in rubber industry: 29

What drew you to the rubber industry, and what has made your career in the industry rewarding?

You could say that I was an “accidental entrepreneur” in the rubber industry. My father wanted to give me an opportunity to start something for myself as the family business would go to my brother—just because he was a boy!

The core business of the United Kingdom-based company that we dealt with was adhesive tapes, and they had one line that was into making elastic. Despite our understanding, we were sold faulty equipment, given incorrect market studies and the customer list was sold to the competition. Regardless of these setbacks and the fact that we didn't have any clients for

close to two years, we've not just survived but thrived over the past 25 years.

Who or what inspires you?

I'm inspired by my grandfather's legacy—Bhalchandra Digamber Garware, who was a pioneering industrialist born in 1903 and founder and chairman of the Garware Group of Industries.

Despite coming from abject poverty and armed only with a basic formal education until the sixth grade, through sheer grit and determination he built himself up to be a businessman of some repute, both in India as well as in the U.K. He started his business in the pre-owned car industry and eventually expanded into a number of ventures in the plastics industry.

A Padma Bhushan Awardee, he was known to be a legendary philanthropist and founded over 75 charitable trusts. He also set up several well-known educational institutes, including the University of Bombay's Garware Institute of Career Education and Development, among others.

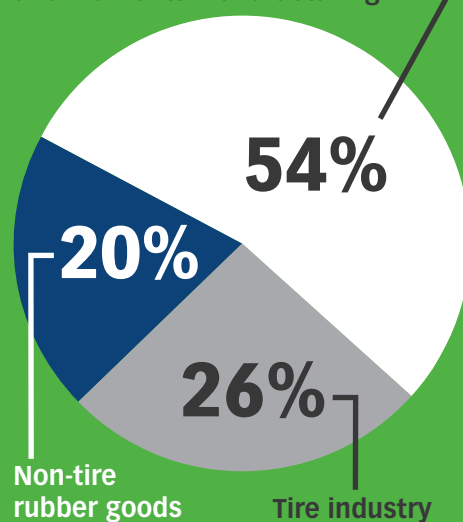
What is the best advice you have ever received?

Revenue is vanity, profit is sanity, but cash is king! This is one piece of advice that has stuck in my mind since the start of my entrepreneurial journey. Consistent, reliable cash flow is one of the true measures of a business' success!

—Mike Scott

WHERE WOMEN WORK: A breakdown of rubber industry manufacturing sector employment

Resin, synthetic rubber, and fibers and filaments manufacturing



Source: U.S. Bureau of Labor Statistics, 2022

Aisha Sheikh

Technical manager of silicones quality control, Wacker Polysilicon North America L.L.C.

2023 Women Breaking the Mold honoree Aisha Sheikh prides herself on accuracy and approachability in her role as technical manager of silicone quality control.

In fact, as a single mother, Sheikh counts the flexibility that Wacker offers its employees as one of the most important virtues in any work/life balance.

As such, Sheikh also gives as much as she gets at Wacker, especially as that outreach relates to the Charleston and Cleveland, Tenn., communities.

She has participated in projects for local women's groups, and has assisted Wacker in its participation in Habitat for Humanity.

She counts as perhaps her most important calling—inspired by science projects with her 7-year-old daughter—her work with young people in STEM areas. Without a pipeline to a younger generation, Sheikh said, any future science-based industries already are behind the curve.

Years with company: 7
Years in rubber industry: I've been in the silicones area of industry since 2018—so 5 years now.

Krista Larmore

Plant manager, Loc Performance

Krista Larmore is new to the rubber industry, but already is making an impact at Loc Performance, where she serves as plant manager for the rubber manufacturing and molding facility in St. Marys, Ohio.

In just a few years, Larmore has significantly improved efficiency, productivity and morale. She is engaged with her plant to ensure the company is meeting the needs and ambitions of the employees, and that they are all aligned to a common goal.

With Larmore as plant manager, the St. Marys facility has exceeded targeted production month over month so far in 2023 and is currently forecast to set a record year for production volume.

Years with company: 1.5
Years in rubber industry: 1.5

What does leadership look like and how do you demonstrate it?

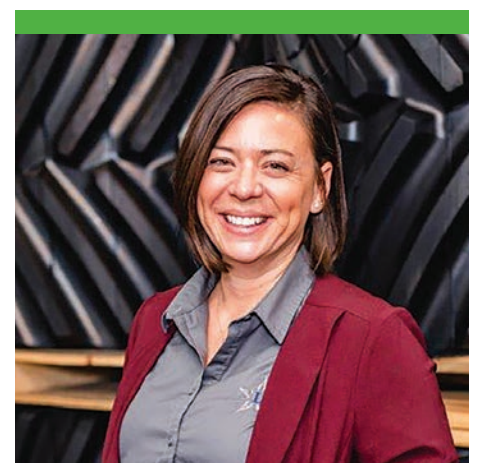
Fluid and versatile. I transform my style to meet the needs of the team that I am working with, as not all people can be managed the same way, because we are not the same. I am driven by my team. The individuals that I employ are here to support themselves or their families.

A poorly run facility could have devastating ripples on our community, and I intend to ensure that my actions drive change in a positive way to secure employment for my staff for years to come.

What drew you to the rubber industry, and what has made your career in the industry rewarding?

Loc Performance St Marys is local to where I have spent most of my formative years. Living close to my home was important, but also having the opportunity to be a part of a team with similar backgrounds. During the interview process, I instantly felt a part of the team.

The facility has been around since 1939, but sold multiple times. During



those transitions, a sense of purpose had left some team members. With the facility now part of Loc Performance's exciting growth, I intend to re-instill a deep-rooted sense of pride that only exists when individuals feel part of a bigger purpose.

What advice do you have for those who feel their ideas and credibility are questioned?

Let them. If they are contributing, bringing value and ultimately operating in an ethical manner, data will show the efforts made are validating to (your) approach.

How do you advocate for yourself and your ideas?

I ask for a “thumb-nails worth of willingness and a little bit of trust.”

My experience doesn't matter to those who haven't seen my growth or journey. What is on my resume isn't validated through action in a new organization, so proving myself and my skill set can only come with time and exposure. I am in a unique position where the line stops here, so my autonomy is stronger than that of a quality engineer or technical role.

—Jennifer Karpus-Romain

How are you challenging your company and co-workers every day?

I wouldn't necessarily call it “challenging” my company or co-workers. Here we see ourselves as a team, one unit. Being successful at work isn't about challenging each other as much as it is about promoting each other's strengths and facilitating a healthy environment to ask for help. I see my co-workers and my team members as an extension of my family. We are here to help each other out to reach a common goal.

What does leadership look like and how do you demonstrate it?

To me, leadership begins with trust, integrity, leading by example and forming a relationship. These things are not easy or quick to obtain. I am constantly making the conscious effort to prove that I am here to be a voice for my employees, that they are heard, and that I would never ask them to do something that I, myself, wouldn't do.

Once you are genuinely trusted, then the rest comes easy. You know who you are leading and can best help each of them reach their individual development goals.



How do you advocate for yourself and your ideas?

I am a scientist—an analyst. I advocate for my ideas with facts and data. I rarely give an opinion on something without statistics and proof to back it up. To me, numbers are black and white, it's hard to argue with facts.

What do you count as one of your most significant failures? What did you learn?

This is tough, I do not believe I have any specific “failures” to address, but I will say that we all make mistakes. It is about how we come out of them and what we learn from them that matters the most. If you fall down 1,000 times, then you must get up 1,001 times.

—Andrew Schunk

Hillary Thomas

Vice president, Westminster Tool Inc.



Hillary Thomas has worked in the plastics industry since the age of 14, starting at her family's business, Westminster Tool Inc.

She has worked in many aspects of her family's business from filing and cleaning machines to marketing and managing. She has been responsible for improving many aspects of the company, including restructuring sales and engineering, initiating cross-training and leading major cultural and technical transformations.

Thomas has taken Westminster Tool Inc. from a company known for being a leader in the injection molding industry to a comprehensive injection molding service provider.

Years with company: 6

Years in rubber industry: Since five years old when my father started the company in the family's basement.

How does your work challenge you?

The most challenging part of my job is finding the middle ground between making promises to my customers and my team and balancing reality. I never want to be a limiting voice in a room but I have a responsibility to bring reality into each con-

versation to ensure we have accurate and appropriate expectations both as a business and within a project.

What does leadership look like and how do you demonstrate it?

Leadership, to me, looks like getting in the boat and rowing with your team. It means doing the work with your team while serving as inspiration for the value in the things we do every day. That means showing everyone you both value them and will challenge them to grow in their potential.

I do this by both asking for and offering help, learning and teaching, working through difficult conversations and asking for feedback and honoring both company and personal needs to the best of my ability.

What advice do you have for those who feel their ideas and credibility are questioned?

Be authentic. Don't pretend to know answers to things you don't. Especially as women it is easier to lose credibility than gain it.

Start by owning what you do and do not know. Next, be willing to learn and ask for help. When you set this foundation, it is easier for people to trust and value what you are bringing to the table.

What do you count as one of your most significant failures? What did you learn?

I was promoted to a role that required me to leave a team, which led to their failure. At the time I thought the team was ready but learned my ego had kept me from seeing what role I played and what impact my leaving would have. ... It helped me overcome my fear of growing someone to outshine me and instead understand the value and importance of growing together.

— Patricia Faulhaber

Banu Bilgin

Logistics manager, Prometeon Tyre Group S.R.L.

When Prometeon Tyre Group S.R.L. spun off from Pirelli Tyre & C. S.p.A., Banu Bilgin had a choice to make.

She chose to continue working with Prometeon. And she is so glad she did. Because as logistics manager, she is helping to shape the company for a new era.

Throughout her 18 years with the tire maker, she has seen it grow and adapt, diversifying its work force, particularly at the managerial level, where, just about 10 years ago there was just one female leader. Today, Bilgin said, there are dozens of women leading in the managerial ranks.

As logistics manager for the commercial and industrial tire maker, Bilgin has a lot on her plate.

Her responsibilities include managing import and export operations; identifying suppliers for international transport services; and leading activities in finished product warehouse, including ensuring product availability, order processing and stock management.

It's a big job—an important one. And one that suits her perfectly.

Years with company: 18

Years in rubber industry: 18

How are you challenging your company and co-workers every day?

I encourage open discussions and brainstorming sessions by promoting a culture of curiosity and learning. I challenge both myself and my colleagues for self-motivation and continuous growth.

I aim to inspire my co-workers to step out of their comfort zones, collaborate and push their performance to drive our company's success to new steps.



What advice do you have for those who feel their ideas and credibility are questioned?

Remember, everyone faces moments of doubt. But by believing in yourself, presenting your ideas confidently and consistently delivering quality results, you can overcome challenges to your credibility and gain the respect you deserve.

How do you advocate for yourself and your ideas?

I advocate for myself and my ideas with strong communication, self-assuredness, strategic preparation and an ability to adapt to different situations.

— Erin Pustay Beaven

WOMEN BREAKING THE MOLD 2023



Amy Brackin

Senior vice president of sustainability, Liberty Tire

As senior vice president of sustainability, Amy Brackin is responsible for the development and execution of Liberty Tire's recycling strategic vision for sustainability initiatives and goals. She also is responsible for communicating this vision to stakeholders.

Brackin manages the day-to-day oversight of environmental, social and corporate governance initiatives, working with cross-functional teams and leading efforts to create a more environmentally responsible, socially conscious and economically viable business model for the company. She also oversees the annual sustainability report.

Brackin serves as a member of ASTM's COTCO Board and is a past chair of the Synthetic Turf Council.

Years with company: 11

Years in rubber industry: 11

How does your work challenge you?

Each day in this role brings about new challenges, as I am continuously learning and must also navigate the dynamic landscape of the field—from consolidating frameworks, staying abreast of regulatory shifts and fulfilling the escalating demands for data from our stakeholders.

As I traverse this intricate terrain, I find myself continually inspired by the opportunities to contribute positively to both our organization and the broader sustainability efforts.

What advice do you have for those who feel their ideas and

credibility are questioned?

Believe in yourself—that's first. If uncertainty shrouds your ideas, they might be perceived as lacking credibility. Equally important is thorough preparation and a deep understanding of your subject matter. This empowers you to speak with authority and effectively address questions as they arise.

Additionally, while it might seem scary, seeking feedback from others is beneficial. Even if the feedback isn't aligned with your expectations, it offers a valuable perspective and allows you to refine your approach.

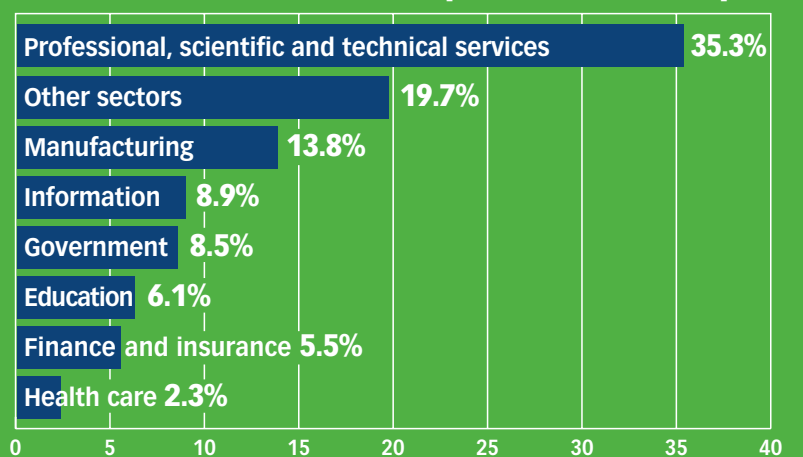
How do you advocate for yourself and your ideas?

I'm brimming with ideas, occasionally to an excessive degree, so I try to prioritize those that are most impactful for the business. I make sure I'm well-prepared to advocate for either the concept or my viewpoint.

Being prepared allows me to clearly explain the value and benefits of the proposal to the company. This involves anticipating potential challenges and being ready to address them head-on. Then, I carefully select the right time to introduce the idea. I recognize that regardless of how promising an idea is, if the intended audience is preoccupied or facing external pressures, it might not be the right time to introduce it.

— Patricia Faulhaber

WHERE STEM TALENT WORKS: A look at how sectors compete for STEM experts



Eileen Noel

Operations area manager, DuPont Kalrez

Eileen Noel is the operations area manager at DuPont Kalrez, where she has worked for the past 11 years.

She started as a first-line supervisor and worked her way up the ranks, making the shift from supervision to management in 2018. She graduated from Massachusetts Maritime with a bachelor's in marine engineering where she was a member of the fifth graduating class with female cadets.

Prior to joining DuPont, she was an engineer for the Naval Surface Warfare Center, Department of Defense.

Years with company: 11

Years in rubber industry: My experience in this industry has been entirely with DuPont, manufacturing Kalrez high performance sealing solutions for the semi-conductor, aerospace, transportation, and oil and gas industries.

How does your work challenge you?

What I love about my job is every day there are opportunities to collaborate and improve processes across different work teams to support business needs. Over the past year, we have been building a new manufacturing plant, and being prepared for start-up has presented many challenges. I was able to successfully overcome the staffing challenges that were present due to macro-economics and the global pandemic by recruiting and hiring the right personnel and training them in all the skills needed.

By building a comprehensive and well-planned strategy, the operations team has done a great job of preparing the work force for their new roles while continuing to meet our customers' demand. We are currently in the process of qualification and start-up of our new DuPont Kalrez manufacturing facility and I look forward to the next challenge.

What drew you to the rubber industry, and what has made your career in the industry rewarding?



Initially, I was drawn to this career path because of my interest in manufacturing. Since working in this industry, I have learned so much around the different processes required to make such a high-performance sealing solution, the applications Kalrez is used in and the global market that we serve. It is very rewarding knowing the product I make goes into so many different applications that support our global supply chain.

How do you advocate for yourself and your ideas?

Advocacy is an ongoing process that requires you to be persistent and adapt to the situation. Be sure to choose the right platform and timing to present yourself or your ideas. Choosing the right platform (one-on-one meeting, team meeting, written communication, etc.) will give you the best opportunity to be heard. Choosing the correct timing is also critical, ensuring your audience is receptive and has the availability to give attention to you and your idea.

— Jennifer Karpus-Romain

Bonnie Stuck

President and senior technical adviser, Akron Rubber Development Laboratory Inc.

Bonnie Stuck has lived through a lot during her more than four decades in the tire and rubber industry. She was the second female hired on the technical staff at B.F. Goodrich's Tire Division.

And these experiences make her uniquely qualified to advise today's younger females on how to survive and thrive in the rubber sector. Her advice is to know your stuff and let others see your expertise, and that will lead to respect—and success—in the industry.

As Stuck is in the final years of her full-time career, she is concentrating on recruiting others into STEM fields and passing along the knowledge she has accumulated during her career.

Years with company: 14

Years in rubber industry: 46

What does leadership look like and how do you demonstrate it?

Leadership is not so much what you say, but what you do and the example you set forth. Our employee manual sets forth rules and regulations, but as a leader you have to follow them if you expect your employees to

follow them. As a leader, I tend to set a positive example and be enthusiastic about ARDL.

What drew you to the rubber industry, and what has made your career in the industry rewarding?

I graduated from Capital University with a lot of student loans. I thought about going onto graduate school but I needed to make some money first. I was from a little town called Bolivar about 30 miles south of Akron.

Back then most of the major tire companies were headquartered in Akron, so it was an obvious place to look for a job. My plan was to work for one to two years. I started at B.F. Goodrich and spent a year on their engineering graduate program. After completing that, I joined the tire division and I have been hooked ever since. Even today, I still find the rubber and plastics industry exciting.

What do you count as one of your most significant failures? What did you learn?

Changing a job because a lot of money was thrown at me. It didn't work out, but I realized



this early and moved, which was best for the company I was working with and for myself.

— Bruce Meyer

WOMEN BREAKING THE MOLD 2023

Caitlin Steele

Senior director of global marketing in the fluid power and industrial hose segments, Gates Corp.

Dogged persistence helped Caitlin Steele achieve her current post at Gates Corp., serving as senior director of global marketing in the fluid power and industrial hose segments.

Steele prides herself on a transformational form of leadership, one that sets the parameters and goals for a project and then gets out of the way so that her charges—she has more than 40 people who work for her—can exercise their own more extensive expertise.

She also noted that company culture makes a huge difference in advancement for females, allowing that “persistence of opinion.”

Steele was fortunate to have several female mentors who already were in executive positions at Gates, and she was pointed in their direction by a male mentor who understood that advice for women in the workplace should come, at least in part, from other women.

Years with company: 5

Years in rubber industry: 5

What does leadership look like and how do you demonstrate it?

My personal leadership style is grounded in authenticity and tenacity. Authenticity is about being transparent and consistent, and creating an atmosphere of trust. I practice honesty in my communication and acknowledge my mistakes. Authenticity also means respecting and valuing the individuality of others.

To help my teammates grow and flourish, I make a concerted effort to understand their strengths, areas for continued development and career goals.

Tenacity is about unrelenting determination: staying committed to goals even in the face of difficulty. Demonstrating tenacity means not being swayed by roadblocks or setbacks. Hurdles are inevitable, but I motivate my team to press on by encouraging problem solving, reframing challenges as opportunities, and affirming perfection can't stand in the way of progress. Mistakes are OK.

What advice do you have for those who feel their ideas and credibility are questioned?

I see having your ideas questioned as a good thing. Maybe this goes back to tenacity, turning obstacles into opportunities,



and cultivating an inclusive environment. Having your ideas questioned isn't a reflection of how valuable you are to the organization. Time and time again, I've seen results from collaboration that includes input from diverse perspectives far exceed what can be accomplished alone. Be assertive in your communication, actively seek feedback, and find allies who can help you move forward.

Credibility, like trust, is something built over time. Your capabilities are not defined by the doubts of others. When your credibility is questioned, it's essential to have open, non-defensive conversations regarding any concerns. People tend to question credibility when they lack information about you and your work; there could be a gap in perception of your capabilities and abilities. This is a perfect opportunity to display your competence and commitment, building your reputation. Don't be afraid to showcase your expertise and assert your true value.

What do you count as one of your most significant failures? What did you learn?

Early in my career, I failed at setting—and holding to—firm but fair boundaries around work-life balance. I averaged 16-hour workdays for nearly two years. I loved the job, and the team and I believed in what we were trying to accomplish, but it was totally unsustainable. I was burned out.

Along with damaging my health, my relationships with friends and family were negatively affected. It was a very hard way to learn an important lesson. Since then, I've found balance allows me to bring my best self to work. While I will always be a team player and do what it takes to get the job done, I now go about it differently.

This might take the form of delegating, reprioritizing, saying no, or implementing a process improvement to free up more time in the future. As leaders, we always want to tap into the potential of our team members and get the most out of them, but it's important for me not to play any part in repeating those major mistakes of mine.

— Andrew Schunk

HIGHLY EDUCATED WORK FORCE

From 1970 to 2021 the proportion of women ages 25-64 in the labor force who held a college degree more than quadrupled.

As of 2021, 47.6% of women ages 25 to 64 held a bachelor's degree or higher, up from 11.2% in 1970.

Source: U.S. Bureau of Labor Statistics

Krista Toutant

Director of procurement and demand management, R.D. Abbott Co. Inc.

Krista Toutant is the director of procurement and demand management for R.D. Abbott Co. Inc. She works with a team that makes sure the company has the right product at the right time.

Toutant started in the industry as an assistant to the vice president of sales and the vice president of manufacturing. She saw opportunities to grow, and she now has progressed to a career in management. She also enjoys recruiting and mentoring others to help the rubber industry continue to grow, thrive and evolve.

Years with company: 8
Years in rubber industry: 22

How does your work challenge you?

In the supply chain world, we are constantly challenged to predict what will happen in the future. While we hope for the best, we plan for the worst. Work challenges me to always be prepared. Be ready to respond to whatever the world is going to throw at us.

What does leadership look like and how do you demonstrate it?

Leadership is dynamic. It includes helping others break performance boundaries and feel good about their work. It is the ability to transition chaos into logical and purposeful actions that produce desirable outcomes. Leadership is helping others navigate through a journey but not mandating the path. While on the journey, explore different routes, but be prepared



for the consequences of poor choices. Most importantly, celebrate when the destination is more spectacular than expected.

What has made your career in the industry rewarding?

I have stayed working in the industry because it has been good to me. I work at a great company with many talented colleagues. As a matter of fact, my daughter has just entered the rubber industry as well. If I didn't love this industry, I would not have suggested that she start her career here. I believe she has the potential to do very well.

— Patricia Faulhaber



Kylie Knipp

Senior technical account manager, Ace Laboratories

Kylie Knipp is a leading technical professional in the rubber industry working for Ace Laboratories. Starting her career in custom compounding, she is now in third-party laboratory services.

As a technical project manager and adviser, Knipp supports hundreds of companies throughout the rubber industry. Additionally, she is the committee chair for the ACS Rubber Division Young Professionals Committee and the vice-chair for the association's Education and Outreach Committee.

Knipp also helped develop the Experience Elastomers program for high school students to experience the rubber industry during the International Elastomer Conference. She serves as program planning chair for Ohio Rubber Group.

Years with company: Since January 2023, but my role is very similar to the role I had with ARDL for 8 years.

Years in rubber industry: 10

How does your work challenge you?

As an independent testing lab, we work with all types of applications and materials. That means your knowledge base has to be broad or you at least have to have resources that span a broad range of topics. You never know what kind of a problem a customer may have, and every customer's process and materials are unique. Also, with rubber, there are so many variables that can affect a material's performance, trying to narrow it down to which variables are the most critical can be a challenge at times.

How are you challenging your company and co-workers every day?

As a bit of a perfectionist, I feel that there is always room for growth and

improvement. As I find opportunities for growth, I bring them to our team's attention and we brainstorm ways we may be able to improve.

At my previous job, I was an internal auditor and I don't think that mindset has ever left me. Thankfully, we have a great culture here at Ace, and the whole team knows that if I challenge the team, I'm doing it to make us better in the long run.

What advice do you have for those who feel their ideas and credibility are questioned?

Try to not take it personally. Not every culture (or generation) respects women the way we would hope, but it's possible to earn peoples' trust and support, it just may take more time than what you were hoping for.

How do you advocate for yourself and your ideas?

The thing I've found to help the most is building relationships and staying humble. If you can find common ground with someone, it allows you to build a bridge and possibly get them to open up to you. Once you establish a relationship with someone, they tend to be more willing to listen to your ideas.

I know this last bit probably goes against what most people will tell you, but I've found it helpful to pitch an idea with humility mixed in. For example, you could say something like "I was thinking of trying XYZ to fix this problem, but I'm not sure if it will work. Would you have any suggestions to improve my plan?"

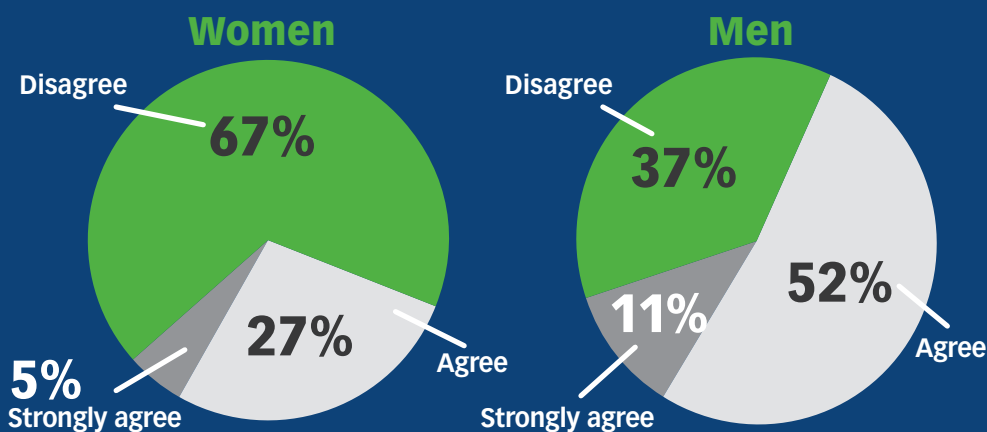
I've found that giving people the option to add their input to your plan can help get their buy-in and support when it comes time to actually implement it.

— Patricia Faulhaber

EMBODYING LEADERSHIP

The Manufacturers Alliance asked survey respondents to rate their level of agreement with the following statement:

My appearance does not influence how others judge my leadership skills.



Source: Manufacturers Alliance Foundation survey, 2023



Hulya Candemir

RFID unit, Prometeon Tyre Group S.R.L.

Don't ever tell Hulya Candemir that the tire industry is a man's industry. Because the tire industry—and her place in it—is uniquely hers.

Throughout the last 15 years, she has built a career with Prometeon Tyre Group Turkey, first working in truck tire production before moving to the company's RFID unit.

During the early part of her career, she was the only woman working amid hundreds of men. And while there were challenges in being the first or only, she handled

them all with grace, and found success while earning respect along the way.

Years with company: 15
Years in rubber industry: 15

How does your work challenge you?

The thing I used to have difficulty with is "you're a woman, you can't do this." If I am given this job, I will do it even if it is difficult.

What advice do you have for those

who feel their ideas and credibility are questioned?

I would tell her/him to persevere, if she/he wants to succeed. She/he should do her/his job without listening to anyone.

What do you count as one of your most significant failures? What did you learn?

Not trusting yourself is failure. If you are not confident, you can't succeed.

— Erin Pustay Beaven

Amanda Cool

Supervisor and test engineer, chemical testing and tire services, Smithers Materials Science and Engineering Division

For the last eight years, Amanda Cool has charted the course of her teams within the walls of Smithers' Material Science and Engineering Division.

She has years of experience conducting client projects, and represents the needs and priorities of Smithers' clients when developing a strategy for the future of the Akron-based company's chemical analysis service portfolio.

She is in charge of project management, on-time deliveries, client communications, project flow and quality assurance for both the chemistry lab and the tire service department.

More than anything else, Cool said she enjoys seeing her team's successes, especially after troubleshooting and solving problems together.

She appreciates the worth of building trusting relationships, but without the micromanagement that can accompany the

teaching and advisement of the employees for which she is responsible.

Years with company: 8

Years in rubber industry: 8 years in rubber, 2 years in plastics

What does leadership look like and how do you demonstrate it?

Leadership is about having self-control, self-awareness, conflict resolution skills and compassion. A leader needs to be able to be their team's biggest advocate while also holding their team accountable. My employees know that I have an open-door policy and am always available to listen, coach and mentor, but I also expect work to be completed on time to give our clients the best experience possible. My team also knows that I will not ask them to do anything that I would not do myself. I take the time to get to know each of my

team members and co-workers personally.

How do you advocate for yourself and your ideas?

I have been advocating for myself since I started my career. I get to know my audience before I come to them with my ideas. I listen to constructive criticism, so I can reevaluate my ideas and make changes if needed. I also continue to learn new departments within my company. I started as a test technician in our physical testing laboratory in Akron, and once I felt ready to learn more, I transitioned to quality assurance for our medical device division, where I helped maintain GMP compliance for the lab. I then took over all dynamic mechanical analysis (DMA) testing for our physical testing laboratory before being promoted to supervisor of the chemistry department and Tire Service department.



What do you count as one of your most significant failures? What did you learn?

I don't think of how things happen in life or work as failure—just redirection onto a better course. But before I became more self-aware and learned better self-control, it was easy for my temper to make an appearance when things were not going as planned or additional stress was

added to a situation. I have since learned to remove myself from stressful situations long enough to reevaluate, reflect and not dwell on the situation. When I am encountered with a situation that isn't according to plan, I try to stay optimistic, reach out to mentors for coaching when needed, and get the job done.

— Andrew Schunk

Julie Van Brunt

President & CEO, Lintech International L.L.C.



degree in mathematical sciences from Clemson University and her MBA from Georgia College and State University.

Prior to her role as president and CEO, she served as executive vice president and was responsible for accounting, operations and customer service.

Years with company: 38

Years in rubber industry: 38

How does your work challenge you?

There are so many aspects to the industry, and it is ever changing. It is my responsibility to keep abreast of what is happening so I can make the best decisions for my staff and company.

What drew you to the rubber industry, and what has made your career in the industry rewarding?

Our suppliers helped us get started in the rubber industry, and it has been rewarding to be a part of growing the company in the industry.

What do you count as one of your most significant failures? What did you learn?

One of my most significant failures was a lost opportunity because I failed to make a decision. Indecisiveness is a decision. I learned that it is better to be in a position that you chose than in one chosen for you.

— Sam Cottrill

Julie Van Brunt, president and CEO of Lintech International L.L.C., stepped into her current role 10 years ago. But her roots with Lintech—a national chemical distributor for manufacturers of resins, fillers and additives in the rubber, plastics and CASE markets—run much deeper than that.

Her father, Tom Hinson, founded the company in 1983, and passed it down to her in 2013.

Van Brunt, now with over 38 years of experience in the rubber chemicals industry, has—alongside the entire Lintech team—helped the chemical distributor grow both in revenue and territory and market expansions.

She received her undergraduate

Flaviana Mariano

Retired technical director, West American Rubber

Before her recent retirement, Flaviana Mariano was the technical director at West American Rubber (WARCO) in Orange, Calif.

Part of what drew her to work in the industry was the ability to learn more about the unique properties of rubber.

Mariano first realized the importance of rubber in everyday life when she worked as a rubber chemist trainee. Having worked in the industry for 35 years, both in the U.S. and the Philippines, she believes the challenges she encountered in her work made her life more interesting and exciting.

Years with the company: 2.5

Years in the rubber industry: 35

How does your work challenge you?

Every compound problem or processing issue should be solved as soon as possible to ensure that rejection rates stay in control. Problems solved ranged from the simplest to the most difficult compound.

What drew you to the rubber industry, and what has made your career in the industry rewarding?

I left the industry for 11 years while I worked at the Central Bank of the Philippines. I missed the challenges that I encountered in the rubber industry. These challenges made my life more interesting and exciting, so I returned to the rubber industry in 1991. I felt happiness and fulfillment as each assigned project was successfully completed.

What do you count as one of your most significant failures? What did you learn?

My most significant failure was not approaching the project correctly, which led to more trials and R&D. I learned that to minimize scrap and maximize the company's resources, every project should be approached the way it should be done the very first time.

— Patricia Faulhaber



MONEY MATTERS

DID YOU KNOW? The pay gap widens as women become more established in their careers. As of 2021, women full-time and salaried workers ages 25-34 made 90.6% of men's salaries. That same year, the pay gap for women ages 55-64 was 77.7%.

Source: U.S. Bureau of Labor Statistics

Tugba Basaran

Brand, communication, trade and sales operations manager, Prometeon Turkey



Years with company: 16
Years in rubber industry: 16

How are you challenging your company and co-workers everyday?

The business world, the economic conjuncture we are in, the competition is challenging enough. With the support of our leaders, we manage this by anticipating, making the right plan, thinking innovatively, doing the best of what we do and putting forward the best practice.

What I do is to ask why we are doing it this way, can't we do it differently? I am not a status quo-ist. I like to try new ways, but in doing so, I put my hand under the stone with everyone else.

What does leadership look like and how do you demonstrate it?

I think a leader is fair, inspires, is always there for his team, offers support. He doesn't tell the solution directly, he lets them find it themselves. He foresees mistakes, takes precautions accordingly and tolerates the minimum amount of mistakes that occur, showing them as a competence that needs to be developed. In short, it gives direction and raises new leaders in its place. This is my understanding and expectation of leadership.

What advice do you have for those who feel their ideas and credibility are questioned?

I didn't speak my mind for a very long time, and now I see that that was very wrong. You should always speak your mind, even if it's wrong, and stand by your opinion, even if it's the right one. But you should not fall in love with your opinion.

Like brands, people need to question love mark vs. trust mark. First trust, then love. And honesty and integrity are the most important things for trust.

— Erin Pustay Beaven

Perhaps one of the most underestimated aspects of growth is the courage needed to achieve it. It takes bravery to try new things, ask for help and ask questions. It requires a drive that takes you out of your comfort zone—and out of your way—to try new things, understand new things and excel at them.

Tugba Basaran is one of those kinds of people. The courageous, curious type. And it is that trait that has allowed her to thrive at Prometeon Tyre Group S.R.L.

As a member of the Prometeon Turkey operation's marketing department, she brings big ideas and fresh perspectives that are setting the company up for success. She even broke a glass ceiling along the way, becoming the first female employee in the marketing department.

Irene Yurovska

Consultant, YIGlobal

Irene Yurovska is a perfect example of the old axiom that once you get in the rubber industry, you never get out.

Growing up in the former Soviet Union, her career path was chosen for her, a product of the system in the USSR that promoted antisemitism and gender discrimination.

But despite that less than ideal initiation in the industry, Yurovska fell in love with the "most exciting polymer," and has survived and thrived in the industry for more than 50 years. Along the way, she developed her own way to deal with working in a male-dominated industry and to recruit others to follow their own path into rubber.

Years with company: 6
Years in rubber industry: 50-plus

What drew you to the rubber industry, and what has made your career in the industry rewarding?

I started my career in the rubber industry when I was 17 years old. It was not my choice, but rather a result of antisemitism and gender discrimination in the former USSR. I had excellent teachers and mentors, completed my Ph.D. and fell in love with elastomers, given their exciting and unique properties. Via my professional activities, I made lifetime friends.



I was lucky to get a professional job within three months after I moved to the U.S. from the former Soviet Union. While working in the rubber industry, I raised and educated two children, got an MBA in international business and finance, published many papers, authored more than 50 patents, and traveled for business around the world. These days, I love sharing my knowledge and experience in rubber with those who need it worldwide.

What advice do you have for those who feel their ideas and credibility are questioned?

Learn, research and gain facts to confirm that your ideas are valid. Once you have facts to confirm your ideas, fight for your credibility. Stay professional, respectful and adamant.

What do you count as one of your most significant failures? What did you learn?

I was raised to be a good and nice person, and I was naive, expecting that other people are the same. In fact, there are some people who want to control, manipulate and take advantage of others. It was my failure not to recognize that in a timely manner. I learned to be more realistic and to guard my personality and ideas.

— Bruce Meyer

WOMEN BREAKING THE MOLD 2023

MORE TO THE STORIES

Learn more about our Women Breaking the Mold honorees. At RubberNews.com, you'll find full profiles and an expanded Q&A with each of the women who make up the Class of 2023.



Keri McDonald

Strategic projects and Innovation Center manager, Wacker Chemical Corp.

Keri McDonald, strategic projects and Innovation Center manager in Ann Arbor, Mich., for the Wacker Chemical Corp., rarely leaves a stone unturned in her planning for some of the Munich-based company's largest North American projects.

Critical to her overall leadership philosophy is a blend of inclusivity and exclusivity. While she has seen success in reaching out to every affected employee in any given project to gather opinions and let them know their voices are being heard, she also prides herself on community outreach on behalf of Wacker.

As such, she has developed relationships with more than 25 Ann Arbor organizations, and assisted in the development of an English as a Second Language program in Charleston, Tenn.

Years with company: 5
Years in rubber industry: 5

How are you challenging your company and co-workers everyday?

Other than my general chaos? I challenge my company to embrace new ideas, to have a flexible culture focused on growth and inclusion over status quo (and I have to say that this is a true strength at Wacker).

I challenge my co-workers to ask all of the questions: Why do we do this? When did we last review this process? What are we missing? What is possible? I challenge myself and others to see the positives in discomfort.

Growth doesn't happen in the comfort zone. It's OK to ask difficult questions, and it's OK if there's pushback. Absorb it and let the data lead.

What does leadership look like and how do you demonstrate it?

Leadership, to me, looks like growing leaders. But more importantly, it's what it sounds like. It's noisy.

I've been given the wonderful opportunity to work with people

learning LEAN Six Sigma and expanding their capabilities and mindset with those tools and also to have an incredible facilities team. I want to hear when I'm wrong. I want to hear if they disagree with my approach. Poor leadership is quiet and easy: Do what I say.

True leadership is loud and challenging. It takes more effort to listen and explain the reasoning and even more to be humble enough to admit that a different approach is better and change your mind, but it's worth it.

My team is comfortable bringing a concern to me, but they also always have a solution. They know that is the first question I'll ask: How do you think we can solve this? The greatest thing I can do for them is support them and empower them to own their processes and know that even if we make the wrong call, I have their back and we'll figure out the right path forward.

What advice do you have for those who feel their ideas and credibility are questioned?

In my role, every team questions me because I'm there to help them find better ways of doing their work when frankly, I have no idea what they do when I first walk in the door.

I welcome the opportunity to prove what I can do and earn their trust. Once I've done that, if they choose to question my capabilities, I choose not to work with that team. It's clear we weren't a good fit. Don't force yourself to a table where you aren't valued. Take your seat and talent away.

New ideas? I want people to question those. Let's find the best course of action if mine isn't it. If my ideas serve as the starting point to the solution or we need something else entirely, then great!

Questioning ideas and having respectful dialogue is critical.

— Andrew Schunk

Frederica Tondini

Chief procurement officer, Prometeon Tyre Group

Frederica Tondini is the chief procurement officer at the Prometeon Tyre Group and has proven herself as a strong leader with extensive knowledge in procurement.

She built Prometeon's Indirect Materials Global Procurement team, initially as just a one-person team.

Tondini strongly believes in the power of team and partnerships, and has been able to grow and adapt to both her company and industry needs.

Years with company: 6

Years in rubber industry: 6 years. Before I was in the electronic components and TLC Industries.

How are you challenging your company and co-workers every day?

In the last three years the world has changed a lot, and the supply chain has had to adapt (to the changes) as a consequence. We went through many disruptions caused by external factors, such as COVID, macroeconomic changes, (hyper)-inflation in some countries and geopolitical crisis.

What drew you to the rubber industry, and what has made your career in the industry rewarding?

In 2017, I decided to join Prometeon after the spin-off from Pirelli and built from scratch the Indirect Materials Global Procurement team. It was one of the biggest challenges of my career, but I was able to grow in role and responsibility and was promoted to CPO in three years.

How do you advocate for yourself and your ideas?

I strongly believe in the power of the team. Only with a strong and diverse team is it possible to achieve great results. I also believe that the diversity exists on the eyes of who's watching. I only see professionals surrounding me. I do not pay attention to their gender, religion or personal attitudes.

— Jennifer Karpus-Romain



Lucy Oldfield

Technical services manager, Wacker Chemical Corp.

Lucy Oldfield expected her career with Wacker Chemical Corp. to be a very short one. She joined the company for a six-month position in the shipping and receiving department.

Nearly 30 years later, she has no plans to move on. After working in shipping and receiving, Oldfield went on to become a technician and a chemist before taking a position as tech service manager. It is through this position she continues to demonstrate her creative and critical thinking skills as well as her lead-by-example leadership style.

Oldfield is always looking for ways to make a difference—both in her company and community—volunteering for initiatives that allow her to give back, care for others and protect the environment in the process.

Years with company: Close to 30 years

Years in rubber industry: Started with Wacker, in silicones in 1994.

How does your work challenge you?

As a technical service manager, I work with production, customers and colleagues to troubleshoot and create solutions. This work challenges me due to the nature of the work. I may have an emergency at a customer's location where I need to be adaptive and troubleshoot to find them a solution. I may be called to assist with an issue that has cropped

up within production or may need to collaborate with global colleagues to help solve an issue or anticipate overcoming an obstacle. So each day I may have a general idea of what I might be working on, but that might fly out the window due to other more pressing matters that need my attention and efforts.

How are you challenging your company and co-workers every day?

Innovation is a large part of our annual MBO (management by objectives) goals, established each spring for each technical employee. This is why we have weekly meetings where project status is shared and issues are presented to the team to help solve. It gets all of us thinking of possible solutions and ways to get to the finish line quicker.

What advice do you have for those who feel their ideas and credibility are questioned?

For credibility: Be a woman of real substance; always be honest and upfront, and if and when you have made an error, apologize—admit to it and learn from it.

For ideas: Put a lot of thought and planning into your idea, troubleshoot it fully ahead of time, and present it confidently. If your idea does not get chosen, you still have a voice as a team player, and sometimes, if you have the bandwidth, run with your idea.

— Patricia Faulhaber

Camille Duvall

Market developer, ExxonMobil in Spring Texas



Camille Duvall sees some leadership models try to box or categorize people. But good leadership, to her, is allowing people to “be creative and be you.”

She realized early in her career that she liked working with bright, creative and interesting people and found that working in the plastics industry allows her to do that.

She developed an ExxonMobil presence in the Sao Paulo community by organizing and leading the first outreach activity to teach young people about the common skills needed to work in engineering. Duvall believes in the power of networking and said, “People often underestimate how each interaction you have can impact you or the other person.”

Years with company: 14 years with ExxonMobil and 18 months in current role

Years in industry: 14 years plus 2 internships while still in college

How are you challenging your company and co-workers every day?

I challenge others to think creatively and build relationships while we are working toward our goals. It is tempting to skip that part because it takes time! For example, before I start team meetings, I will bring trivia or an ice breaker if there are new team members before diving into the work items so we can all get to know each other better. I think this builds stronger teams and long term it drives better business results.

How do you advocate for yourself and your ideas?

When I really believe in an idea, I make time to think through the “pitch” (including data if at all possible) so that the “why” behind my idea is really clear, and I speak with conviction when presenting it.

What do you count as one of your most significant failures? What did you learn?

I tried out a role in the financial organization and it did not go well. I learned more humility and what I really wanted out of my career (Hint: It wasn't more financial roles!)

— Patricia Faulhaber

Charleen Heinke

Technical sales manager, R.E. Carroll Inc.



Charleen Heinke serves as the technical sales manager at R.E. Carroll Inc. and is thriving in the rubber industry because it keeps her on her toes. There is always something new to learn and situations to navigate.

Heinke is very active in regional rubber groups, never hesitating to volunteer in the community, such as organizing backpack supplies to schools near R.E. Carroll's facilities, as well as serving on the company's Corporate Culture Team.

Years with company: 9
Years in rubber industry: 9

How does your work challenge you?

There is always something new to learn and situations to navigate. Every day is different.

How are you challenging your company and co-workers every day?

I challenge my colleagues to remember the customer always comes

first, and we need to meet their expectations and requirements.

What drew you to the rubber industry, and what has made your career in the industry rewarding?

I have a lot of coatings experience, so the transition into rubber was not too difficult. There are different processes, but many of the same selling techniques and manufacturing disciplines. My career has been rewarding because I have been able to help my custom-

ers achieve their goals and I enjoy the camaraderie with the people within the industry.

What do you count as one of your most significant failures? What did you learn?

My biggest failure has been my biggest success. Knowing when to fight for something I believe in and knowing when to let it go. There is a fine line in many situations.

— Jennifer Karpus-Romain

MORE MONEY MATTERS

DID YOU KNOW? Women earning hourly pay often are paid less than their male counterparts? As of 2021, the pay gap for women ages 20-24 was 94.2%. That same year, the pay gap for women ages 55-64 was 83%.

Source: U.S. Bureau of Labor Statistics

Kris Baucher

Commercial manager, USA, DRI Rubber



Kris Baucher proved to be a quick learner as she was awarded multiple promotions at DRI Rubber.

Despite the lack of a chemistry or manufacturing background, she has evolved into an industry leader in sales, negotiations and relationship building. She's an example of why hard work and integrity still matter, even in a small town or a company where everyone knows everyone else. Best of all, she's just getting started, and she's pleased that there are signs of similar growth for women working domestically within the rubber industry.

Years with company: 15

Years in rubber industry: 15

Paula Andrea Restrepo

President, Silicaucho International

Paula Andrea Restrepo has led Silicaucho International, located in the "macho society" of Medellin, Columbia, as president for three years after pulling the company back from the brink of bankruptcy due to embezzlement and internal theft. Since then, she has paid back all the company's debts, reestablished its credibility and is now looking to grow the company's production and sales to better serve its customers.

She said her previous experience as the owner of a clothing store for a private fashion designer, her education in accounting and being a mother of four has prepared her for handling the multi-tasking required of being president of the gasket manufacturing company.

Years with company: 3

Years in rubber industry: 3

How does your work challenge you?

Every day is a new challenge. I am a very black-and-white person, yet I am from a country where our culture by nature is very grey. So, every day at the factory, my work is challenged by the very culture which I was raised in.

How are you challenging your company and co-workers every day?

Every day I try to challenge our employees with doing what you say you are going to do. If you say an order will ship next Friday, then do not tell me or (more importantly) do not tell our customer that the order did not ship. To me, this is a very black-and-white issue, and I want my

What drew you to the rubber industry, and what has made your career in the industry rewarding?

The rubber industry is interesting, in that there are ever-changing uses and applications for rubber. One of the most rewarding aspects of what we do for the rubber industry is reprocessing and finding a "home" for rubber waste streams. It feels good to be part of a circular economy, helping to do our part in improving the global environment.

What do you count as your biggest failure and what has it taught you?

Not believing in myself or doubting myself. It's easy to convince yourself that you aren't smart enough, good enough or experienced enough. I am still learning this lesson, but so far, it's taught me to accept where I am in the process, but never be content and to ask more questions, be curious and always be open to learning.

Who were your career mentors, and what role did they play?

I have been blessed with knowing many strong women in my life, both personally and professionally. They have helped mold me into who I am today, and I couldn't be more appreciative for their gifts. They have come into and out of my life at different times, teaching me to stand up for myself and what I believe in, building my confidence, and most importantly, how to pick myself up when I've been knocked down (and how to acknowledge the failure or rejection, learn from it, and come back stronger because of it). I wouldn't be in my current position without their insight and support.

What would you tell someone considering a career in the rubber industry?

Be prepared to get dirty and you'll get used to the smell, eventually!

—Mike Scott



employees to incorporate the same mentality. DO what you said you were going to DO.

What advice do you have for those who feel their ideas and credibility are questioned?

If you truly believe in your ideas, then don't budge. Tell what you believe to be true and stick to it. Even if those people do not agree with you, they might not like you, but in the end, they will respect you because they will always know where you stand. The more you express what you feel in your ideas, over time you will earn more credibility for your positions (whether they like those ideas/positions or not).

—Sam Cottrill



Lisa Mantooth

Community relations specialist, communications coordinator, Wacker-Charleston

ATennessee native, Lisa Mantooth took on the challenge of working in the manufacturing industry despite zero previous experience in the sector. But she has emerged as the perfect team member to lead the community relations outreach for Wacker's largest U.S. plant because of her willingness to work with colleagues to understand their motivations and special causes.

As a result, Wacker has become closely aligned with the local community and is increasingly seen as a top local employer. Lisa is the brain and the drive behind that effort. So much for having no manufacturing experience.

Years with company: 7

Years in rubber industry: 7

In your opinion, what needs to be done to encourage females to pursue STEM-related careers?

Beginning in elementary school, exposing females to the "fun" in STEM careers. Wacker participates in many STEM opportunities with elementary to high school students.

We have female engineers, chemists and other STEM field representatives that volunteer to be inspiring female examples at these events, Aisha Sheikh, another honoree is one of these inspiring females.

What drew you to the rubber industry, and what has made your career in the industry rewarding?

Wacker's commitment to sustainability and their corporate values resonated with me personally. A company that values giving back to the communities they operate, through more than just charitable donations, by connecting team members with the community through STEM programs and humanitarian organizations is a company I wanted to join. Helping our team members make community connections through volunteerism, as well as building relationships across the different departments has been incredibly rewarding.

Who or what inspires you?

Problem solvers inspire me. Individuals who are presented with a problem or issue and have the abilities to work through that problem with a sustainable solution. I am continuously amazed at the level of intelligence of the people employed at Wacker, I listen to them as they process complex formulas or discuss concepts for processes and I am in awe.

What is the best advice you have ever received?

You are never too important to be nice to others.

—Mike Scott

CELEBRATING MOLD BREAKERS

We'll honor our Class of 2023 during the Women Breaking the Mold Networking Forum, set for Nov. 13-14 in Scottsdale, Ariz.

Co-hosted by *Rubber News* and *Plastics News*, the event is intended to foster networking and professional development across industries.

Visit [RubberNews.com/women-breaking-mold](https://www.RubberNews.com/women-breaking-mold) to view the agenda, register and learn more.

Sophie Blais

Manager, European marketing, Cancarb Ltd.

From engineering to marketing in the blink of an eye, Sophie Blais has emerged as a marketing and sales leader, driving the global growth of Cancarb Ltd.

Her approach as a woman and a millennial may be different from some, but the direct, bottom-line approach has worked. Now Blais has set personal goals to expand her role and influence, even if it means having to move from her beloved Alberta.

Who or what inspires you?

I will say that customer visits are what give me energy. COVID-19 showed us that there is no true replacement for meeting and connecting with colleagues and customers.

Especially in such a small industry, we are lucky to forge close, longstanding relationships with our peers.

In your opinion, what needs to be done to encourage females to pursue STEM-related careers?

The issue of women in STEM is always framed as a women's issue, when in reality, we require the energy and support of our male colleagues to continue to include and promote women.

We need awareness of our implicit biases and to give women the opportunity to make their ca-



reer decisions.

Who were your career mentors, and what role did they play?

Very early in my career, I was lucky to work for both a female supervisor and boss. These were both successful engineers, but what I admired most was that they could be respected for their knowledge and intelligence while both raising tenacious children.

It was a testament that women belong in positions of power and importance, based solely on their competence.

—Mike Scott

Ankita Saikia

Vice president of technical and quality, Tyromer Inc.

Ankita Saikia is well-known at her company for being an incredible employee because of how she has honed her technical skills and her people and leadership skills. She is highly recognized by co-workers for her emotional intelligence which sets her apart.

Saikia started her rubber industry career with Apollo Tyres before joining Tyromer Inc., a company that specializes in rubber devulcanization. As the firm's vice president of technical and quality, she was part of the team that brought Tyromer's devulcanization process from lab to production scale, and to a level where the company could qualify the process to a standard acceptable by the automotive industry.

Years with company: Almost 9

Years in rubber industry: 11

What does leadership look like and how do you demonstrate it?

Leadership, to me, looks like a person who is willing to slow down their pace at times to make sure the group doesn't fall behind. Who is intricately involved with the details of a problem but is always able to step out and pull the team toward the main goal. It also looks like the maturity of being OK and happy to see the next generation rising above by building on top of the foundation that they laid.

I try to lead by example of my own hard work and the quality of my work. I try to understand individual potential, learn and show them trust. I try to guide them but also give them a chance to present their ideas and analysis. For me, being a good listener is very important, I want my team to know that they are heard and their contribution matters.

What drew you to the rubber industry, and what has made your career in the industry rewarding?

My interest in the rubber industry peaked around the third year of my undergrad studies when I first realized the amazing properties and applications of this polymer.



The fact that my work with this clean devulcanization has such a great potential impact on the environment is very rewarding. To work with a company that wants to make sure this technology is available globally, assisting people who are willing to work toward this cause.

What do you count as one of your most significant failures? What did you learn?

a) One of the projects that I worked on (though I can't give out a lot of details about it). I was involved in setting and implementing a system and then training personnel to use it and keep it up to date.

I noticed that after a few months of me stepping back, the project fell behind substantially.

b) Lessons—You can't expect everyone to have the same level of work output. Different people have different potentials and shortcomings, so it is important to first analyze the general range of potential and then tailor the training program based on those factors. Frequent checks during the handover period is important, and it is also important to include in the training program the "why" behind a task you expect an employee to perform.

—Patricia Faulhaber

On leading authentically

Michelin's Genevieve Caplette to keynote Women Breaking the Mold

By Erin Pustay Beaven
Rubber News Staff

Genevieve Caplette understands the value of challenges and the lessons they teach us—about ourselves, our companies and our places in them.

She knows because she's been there. And as leadership and team development manager with Michelin North America Inc., she helps others see more of their own potential and how they can evolve to have a greater impact, even as they work through challenges that can become defining moments.

As keynote speaker for the Women Breaking the Mold Networking Forum, an industry event organized and hosted jointly by *Rubber News* and *Plastics News*, Caplette will explore how defining moments can make us stronger and tell us more about who we are.

In her presentation, "How to use your defining moments to be a resilient leader," she'll discuss how to use your authentic self to effectively lead within your own

organization. In doing so, she'll explore how key moments can shape your world view and offer insights into how—when you embrace who you are—you can gain respect within an organization without adapting to fit a "mold."

Plastics News & Rubber News

**WOMEN
BREAKING
THE MOLD**

NETWORKING FORUM 2023

Caplette will kick off the two-day program for the Women Breaking the Mold event set for Nov. 13-14 in Scottsdale, Ariz. Registration for the event is open.

Visit RubberNews.com/events for more about the Women Breaking the Mold Networking Forum and its programming, or to register and secure hotel

accommodations.

A journey of her own

Ten years ago, Caplette's career reached one of those defining moment intersections—a place where the challenges she faced told her a little bit more about who she was, what she could achieve and how she can make a difference.

She was shifting gears, taking a position with Michelin in Truck Supply Chain.

"I learned quickly coming into a large organization, mid-career, isn't always an easy transition," Caplette said in a LinkedIn post. "The learning curve was longer than I expected, taking two years to understand just some of the complexities of the supply chain. By the third and fourth year, I was growing comfortable. I knew the processes, systems and people. Things were good."

And then in 2018, things changed again. Because another one of those defining moments showed up.

Caplette was offered a role in



Genevieve Caplette

the organization that was intended to tap her strengths and, ultimately, strengthen Michelin. In her role as progress adviser, she would be tasked with problem-solving and helping teams find solutions.

"Understand, my world at that time (10 years before Michelin and four years in Michelin) was very supply chain-oriented. I was extremely comfortable in the supply chain. The thought of doing something else was not

just uncomfortable, but scary," Caplette said.

Scary, because when change shows up, so do all of those doubts. "What if I fail?" she thought. "What if I don't fit?"

Turns out, she had nothing to worry about. Because this place was exactly where she needed to be. It taught her how she was meant to lead.

"Within the first few months in progress, I realized I had strengths I didn't know I had. ... After two years, the fear turned to excitement. Facilitation became second nature," Caplette said.

Her success in this position opened the door to her current role. And it's a place she loves. A place where she can use her authentic self to lead effectively.

"In my current position, I am a trainer, coach and facilitator," she said. "I thrive when I can help to instill a lean mindset across Michelin, driving progress through simplification, supporting diversity, equity and inclusion while embracing the 'All Sustainable' approach for the future."

Technical

Evaluation of liquid farnesene/butadiene rubber in a silica tread

By Edward Terrill and
Jonathan Martens

Akron Rubber Development Laboratory Inc.

Yosuke Uehara, Yoshikazu
Ueno and Tatsuyuki Abe
Kuraray

Experimental techniques

Mooney Viscosity: Mooney viscosity was performed according to ASTM D 1646 part A.

Cure Rheometer: Moving Die Rheometer (MDR) was performed according to ASTM D 5289.

TECHNICAL NOTEBOOK

Edited by John Dick

Tensile properties: Tensile properties were measured at room temperature. Tensile properties were measured according to ASTM D412 using ASTM type die C dumbbell specimens.

Dynamic Mechanical Analysis (Strain Sweeps) ASTM D 5992: Metravib DMA 150 Dynamic Mechanical Analyzer was used in shear deformation to perform a double strain sweep experiment (simple shear 10mmX2mm geometry) (called dual lap shear geometry). The experimental conditions were 0.0003 to 0.2 dynamic strain at 15 points in evenly spaced log steps at 30°C and 10 Hz.

ASTM D5992: Dynamic Mechanical Analysis (DMA) Temperature Sweep in shear: A Metravib +150 Dynamic Mechanical Analyzer was used in shear mode (dual lap shear with 10 mm diameter and 2 mm thick specimens to conduct temperature sweeps. The test conditions were 0.05 dynamic strain. The test was conducted from -20°C to +70°C at a frequency of 10Hz with heating rate of 1°C per minute.

ASTM D5992: Dynamic Mechanical Analysis (Temperature Sweep) in tension by

Executive summary

The potential of liquid farnesene/butadiene rubber (LFBR) was evaluated in a silica tread formulation for passenger car radial (PCR) tires. The LFBR was evaluated at 5 phr of LFBR in place of 5 phr of TDAE oil and cure package ratio of 1.05 in the experimental compound. The test plan included Mooney viscosity, MDR cure rheometer, tensile stress strain properties, hardness, dynamic mechanical properties for tire performance predictors, extrusion shrinkage, coefficient of friction—dry, wet, and ice, RTM Friction Tester (MODEL FR-7225) ice coefficient of friction, angle abrader at four severities, physically bound rubber and chemically bound rubber.

The LFBR had the following advantages in a silica tread. LFBR reduced predicted rolling resistance (improved fuel economy) slightly. The bound rubber and chemically bound rubber were increased by LFBR, suggesting improved polymer to filler interaction. LFBR reduced die swell, reduced shrinkage and increased throughput.

The area in which LFBR had the most impact was its dramatic effect on the low-temperature dynamic mechanical properties. LFBR improved predicted winter traction (lower G^* at -20°C). LFBR shifted the glass transition temperature slightly to lower temperatures, thereby reducing G^* at -20°C. The ice coefficient of friction was directionally better with LFBR by two types of testing: the RTM Friction Tester (MODEL FR-7225) and a Trust Washer Testing Machine per ASTM D 3702.

ASTM D 5992: A Metravib +150 Dynamic Mechanical Analyzer was used in tension mode to conduct temperature sweeps. The test conditions were 0.002 dynamic strain with static displacement of 40 microns applied as grams static force (pre-load). The test was conducted from -120°C to +60°C at a frequency of 1Hz with a heating rate of 1°C per minute.

Angle Abrader: The angle abrasion testing was performed according to ISO 23233 (first edition 2009-02-15) titled “Rubber vulcanized or thermoplastic—Determination of resistance to abrasion using a driven, vertical abrasive disc. This ISO method (ISO 23233) was designed for the LAT 1000 (Groshe) abrader; however, it is applicable to the angle abrader.

Coefficient of Friction (COF) and Abrasion: The coefficient of friction test equipment was built by Akron Rubber Development Laboratory and conforms to ASTM D 3702—Standard Test Method for Wear Rate and Coefficient of Friction of Materials in

Self-Lubricated Rubbing Contact Using a Trust Washer Testing Machine. The instrument was driven by an electric motor with a Baldor motor controller to control the rotational speed. It is equipped with an air cylinder and a precision regulator to control contact pressure and includes an in-line load cell to monitor contact pressure real-time.

Torque was measured using a torque load cell in-line with the test fixture. A National Instruments data acquisition board in a personal computer logged the data. The equipment was described in a presentation to the Tire Society.¹ The ARDL coefficient of friction tester is similar to the tester described by Joel Lazeration.²

Bound Rubber and Chemically Bound Rubber: The percent bound rubber of the green

compound was obtained following the method listed in Rubber Chemistry and Technology.⁴

Circular Die Extrude-ability: Extrude-ability and shrinkage of the unvulcanized compounds was determined using a circular die (0.25 inch diameter) per ASTM D2230-96 (2007) and rating system B. The screw speed was 45 rpm. Five 15-inch experiments were performed for each compound.

Compound Formulations: Two compounds were prepared as shown in **Table 1**. The formulation is a representative silica-filled tread for passenger car radial tires. The experimental compound with LFBR was identified by a series of tests to be iso-Mooney and iso-delta torque with the control compound. The iso-Mooney was determined to be 5 phr of LFBR in place of 5 phr TDAE oil. The

See **Silica**, page 22

Fig. 1: Mooney viscosity results.

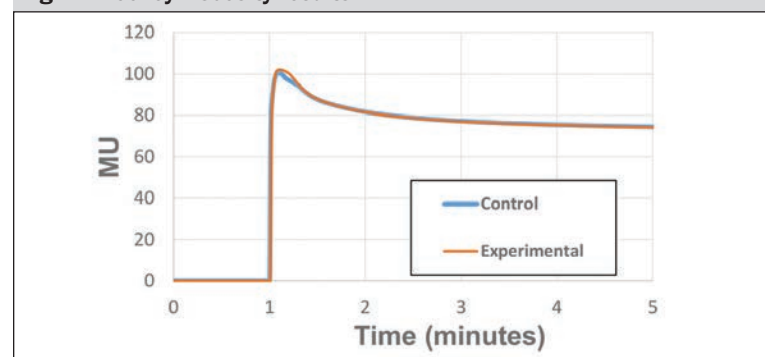


Table 3: Summary of MDR results.

	Min Torque, ML, N-m	Cure Time, T50, min	Cure Time, T90, min	Scorch Time, TS1, min	Max Torque, MH, N-m	Delta Torque (N-m)
Control	0.204	3.59	15.3	1.80	1.12	0.914
Experimental	0.214	3.24	14.4	1.70	1.13	0.916

Fig. 2: MDR cure rheometer results.

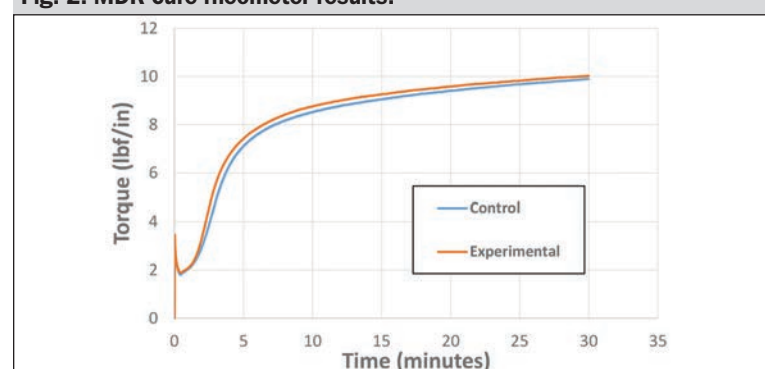


Table 1: Formulations (control and experimental).

COMPOUNDS: Control and Experimental			
COMPOUNDS		Control	Experimental
Material	Mix Step	PHR	PHR
Sprintan SLR 4602	1	75.00	75.00
CB-24 (Pbd)	1	25.00	25.00
N234	1	5.00	5.00
Ultrasil 7000 GR (the 2/3)	1	60.00	60.00
Ultrasil 7000 GR (the 1/3)	1	25.00	25.00
Si-266 (or SCA 985)	1	6.80	6.80
TDAE oil (Vivatec 500)	1	30.00	25.00
Escorez 1102	1	2.00	2.00
Impera P 1504	1	2.00	2.00
stearic acid	1	1.50	1.50
L-FBR-746 (liquid rubber)	1		5.00
Zinc oxide	2	2.00	2.00
Nochek 4729	2	1.50	1.50
6PPD	2	2.00	2.00
TMQ	2	0.50	0.50
Sulfur	3	1.28	1.34
CBS	3	1.10	1.16
DPG	3	1.28	1.34
Total		241.96	242.14

Table 2: Summary of compound Mooney viscosity.

ARDL NB #	Control	Experimental
Mooney viscosity (ML1+4)	99.7	98.9

The authors

Edward Terrill received his bachelor's in chemistry from Ursinus College and his doctorate in polymer science from the University of Akron. He currently is a research fellow at Akron Rubber Development Laboratory Inc.



Terrill

His professional experience includes 40 years in the rubber industry. Prior to joining ARDL, he worked for Goodyear and DuPont. His research interests include rubber compounding and testing.

Jonathan Martens received a bachelor's degree in chemistry and applied mathematics from the University of Akron. He conducted research in college in the field of physical chemistry and has a publication in Molecular Physics.



Martens

He is a staff engineer with ARDL, where he has worked for 10 years.

Yosuke Uehara is a research and development manager of Kuraray Co. Ltd.'s Elastomer Division. He received a master's degree in organic and polymeric materials from Tokyo Institute of Technology.



Uehara

He joined Kuraray in 2008 as a researcher for elastomer products. He is currently responsible for the development of new and innovative elastomer products, especially in the low-molecular weight liquid diene rubber field.

Yoshikazu Ueno is an assistant manager of quality and product development department in Kuraray's Elastomer division. He received a master's degree of applied chemistry from Kobe University.



Ueno

He joined Kuraray in 2014 as a researcher for elastomer products, and his current study involves new polymer development and application development of liquid isoprene and butadiene rubbers.

Tatsuyuki Abe is a sales engineer at Kuraray America Inc. He graduated from the University of Tokyo with a master's in agricultural and environmental biology in 2015, and joined Kuraray Co. Ltd. in Japan as a sales representative the same year.



Abe

His career started with a specific focus in elastomer products in Japan and then expanded to overseas business, including China and South Korea in 2018. In 2021 he relocated to Houston for his new assignment at Kuraray America. He currently is focused on sales activities of Kuraray's elastomer products in North and South America.

Technical

Silica

Continued from page 21

iso-delta torque was determined to be 1.05 cure package ratio (sulfur, CBS, and DPG) in the experimental compound. The iso-Mooney and iso-delta torque restrictions enabled a “fair” evaluation of the LFBR.

Liquid Rubber Material: The LFBR was L-FBR-746 lot number 531233 from Kuraray.

Purpose and scope

This joint research was a joint effort between Kuraray and Ak-

ron Rubber Development Laboratory (ARDL). The project plan includes compounding and testing to evaluate the potential of LFBR for an all-season tread compound, which requires good traction (wet, ice and winter) along with rolling resistance and treadwear resistance.

The testing included Mooney viscosity; MDR cure rheometer; tensile stress strain properties; extrusion shrinkage; physically bound rubber; chemically bound rubber; dynamic mechanical properties for tire performance predictors; coefficient of friction—dry, wet and ice; RTM Friction Tester (MODEL FR-7225) ice co-

efficient of friction; and angle abrader at four severities.

One of the advantages of a farnesene-based rubber chemical is that it is a naturally occurring material (a sustainable raw material).

Results

The experimental compound had 5 phr of LFBR in place of 5 phr of TDAE oil and cure package ratio of 1.05 in the experimental compound. The test plan comparison included Mooney viscosity, MDR cure rheometer, tensile stress strain properties, hardness, DMA strain sweep and temperature sweep comparison of the tire performance predictors. Additionally, the testing included extrusion shrinkage, flocculation resistance, Phillips dispersion, n-Spec dispersion, coefficient of friction—dry,

wet and ice, angle abrader at four severities, physically bound rubber, and chemically bound rubber. These results are described below.

Mooney Viscosity:

The Mooney results for these formulations are shown in **Table 2** and **Fig. 1**. The compound with 5 phr of LFBR in place of 5 phr of TDAE oil had similar Mooney viscosity to the control. Prior experiments had helped to identify the iso-Mooney composition.

MDR Cure Rheometer:

The MDR rheometer results for these formulations is shown in **Table 3** and **Fig. 2**. The compound with 5 phr of LFBR in place of 5 phr of TDAE oil had similar cure characteristic, possibly slightly faster cure associated the higher (5-percent higher) cu-

rative loading. Prior experiments had helped to identify the iso-delta torque composition.

Tensile Properties:

The tensile properties are shown in **Figs. 3 and 4** and reported in the data template. The low strain properties were similar. The experimental compound with LFBR had higher stress at high strain, possibly because it had higher curative loading. The goal of the iso-delta torque experiment was to have equivalent modulus, and this was achieved in the tensile properties between zero and 50-percent strain.

Circular Die Extrusion Properties:

The extrusion properties were measured using a 0.25 inch diameter circular die. The shrinkage and die swell averages are shown in **Table 4**. The experimental compound with LFBR had lower shrinkage and die swell. It is possible the LFBR plasticized compound more than the TDAE oil.

Bound Rubber and Chemically Bound Rubber:

The percent bound rubber of the green (uncured) compound was measured following the method reported in Rubber Chemistry and Technology.⁴ For chemically bound rubber, the procedure was repeated and a beaker of ammonia hydroxide was placed in a desiccator with the swelling samples to give an ammonia atmosphere. The bound rubber and chemically bound rubber results are shown in **Figs. 5 and 6**. The experimental compound (with LFBR) had higher bound rubber and chemically bound rubber than the control, suggesting improved polymer-to-filler interaction. Maybe liquid rubber penetrated filler particles (into the filler particle structure better than polymers) and then the liquid rubber crosslinked into the polymer network. In this way it enhanced polymer-filler interaction, which is important for low strain modulus (dry handling), Mullin softening (lower Mullins softening) and abrasion resistance.

DMA Strain Sweeps in Shear:

The dynamic mechanical properties as a function of strain in shear at 30°C are shown in **Fig. 7** (storage modulus) and **Fig. 8** (tangent delta). The experimental compound (with LFBR) had higher storage modulus than the control compound. The two compounds had very similar tangent delta results.

Comparison of Many Tire Performance-Prediction Properties (shear strain sweep):

The tire performance predictors are summarized in **Table 5**. The experimental compound (with LFBR) had better predicted tire performance in dry handling (storage modulus at 5 percent) and resistance to Mullins softening. The control had slightly better predicted tire performance in dry traction (loss of compliance at 5 percent) and lower Payne ef-

Fig. 3: Tensile stress strain curves.

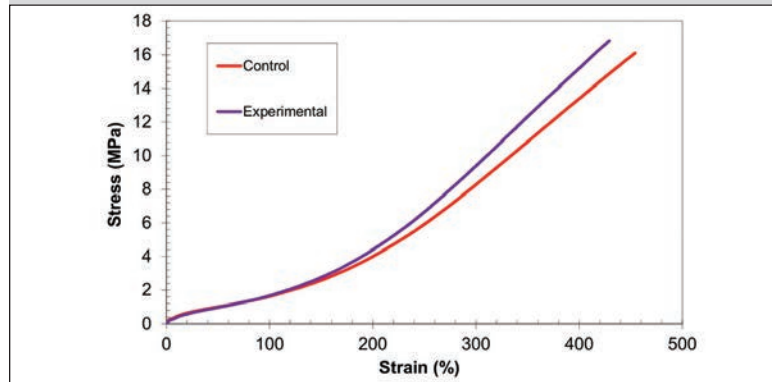


Fig. 4: Tensile stress strain curves (low strain region).

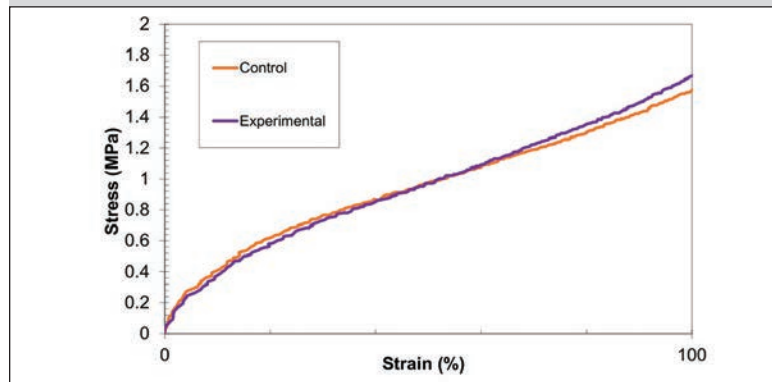


Table 4: Circular die extrude-ability.

ARDL NB #	Shrinkage (%)	Die Swell (%)	Throughput (gm/sec)
Control	5.33	16.7	1.3
Experimental	4.92	12.2	2.2

Fig. 5: Bound rubber.

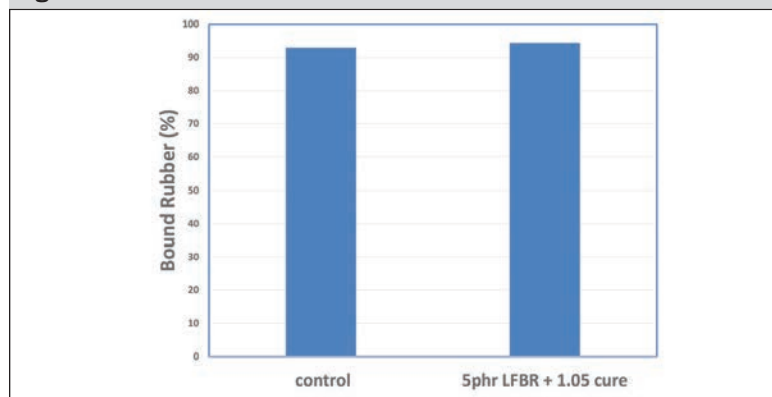


Figure 6: Chemically bound rubber.

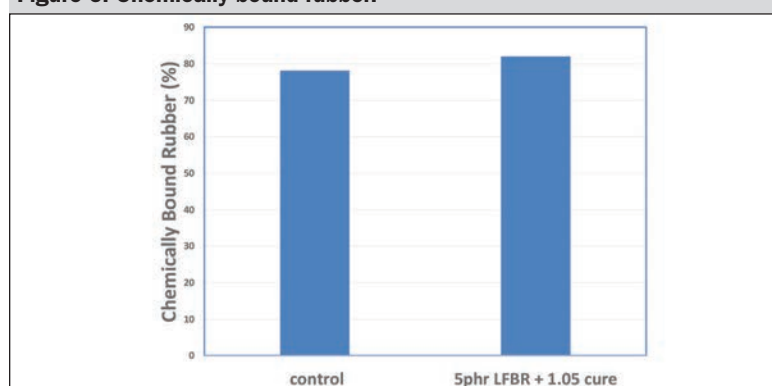


Fig. 7: Storage modulus as a function of strain.

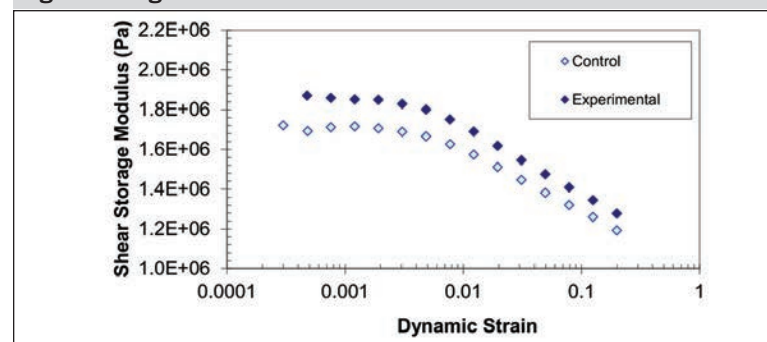


Fig. 8: Tangent delta as a function of strain.

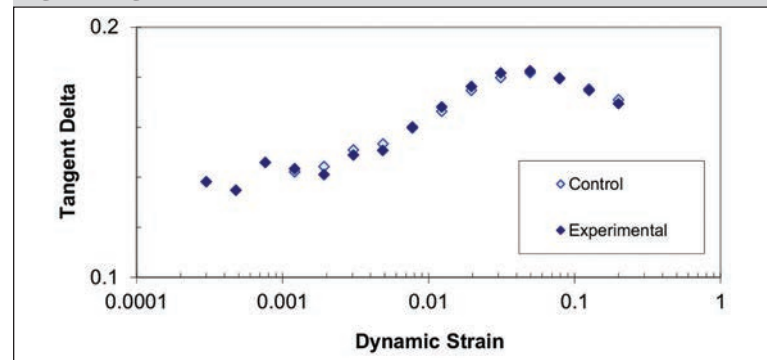


Table 5: Tire performance predictors.

Compound	Tan Delta at 5%	Storage Modulus (MPa) at 5%	Loss Compliance (1/MPa) at 5%	Payne Effect (MPa)	Mullins Effect (MPa)
Control	0.153	1.67	0.0899	0.601	0.0880
Experimental	0.151	1.80	0.0818	0.658	0.0833

Fig. 9: Storage modulus as a function of temperature.

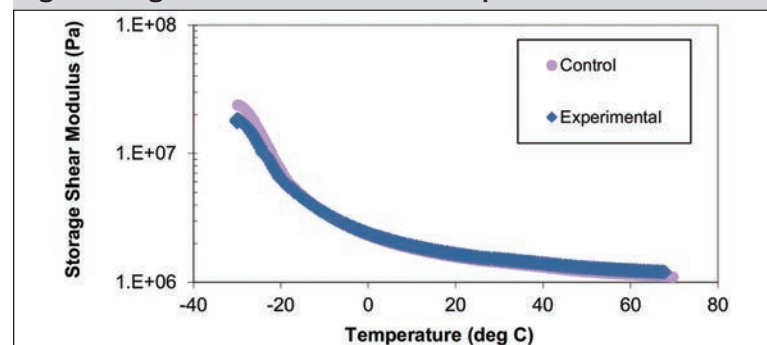
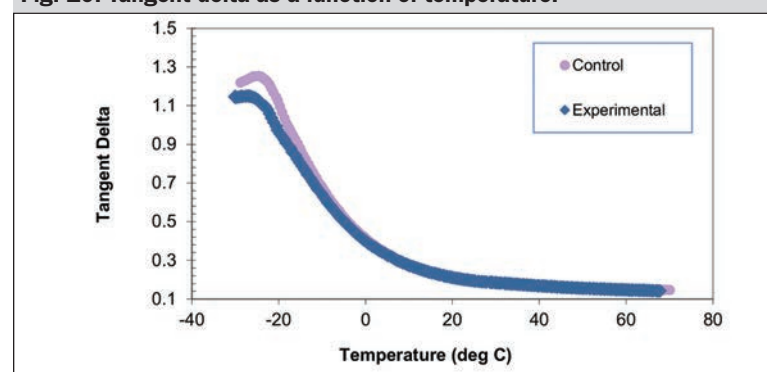


Fig. 10: Tangent delta as a function of temperature.



Technical

fect (lower is better).

DMA Temperature Sweeps in Shear:

The dynamic mechanical properties as a function of temperature in shear are shown in **Fig. 9** (storage modulus) and **Fig. 10** (tangent delta). The experimental compound (with LFBR) had higher storage modulus than the control compound at higher temperatures and lower storage modulus than the control at lower temperatures. The control compound had higher tangent delta than the compound with LFBR at lower temperatures and the compound with LFBR had lower tangent delta than the control compound at higher temperatures.

Comparison of Many Tire Performance-Prediction Properties (shear temperature sweep):

The tire performance predictors are summarized in **Table 6**. The experimental compound (with LFBR) had better predicted tire performance in winter traction (complex modulus at -20°C), rolling resistance (tangent delta at 60°C), dry handling (storage modulus at 30°C). The control had slightly better predicted tire performance in ice traction (tangent delta at -10°C), wet traction (tangent delta at 0°C), and dry traction (loss compliance at 30°C).

DMA Temperature Sweeps in Tension:

The dynamic mechanical properties as a function of temperature in tension (from -120°C to +30°C at 0.2 percent dynamic strain) are shown in **Fig. 11** (storage modulus), **Fig. 12** (loss modulus), and **Fig. 13** (tangent delta). The LFBR in place of TDAE oil shifted the T_g to lower temperature. This was observed as lower storage modulus inflection temperature, lower loss modulus peak temperature, and lower tangent delta peak temperature.

This provided improved predicted winter traction (lower complex modulus and storage modulus at -20°C). The tangent delta of the LFBR containing compound had directionally lower tangent delta at -10°C and directionally lower tangent delta at 0°C than the control compound. The LFBR containing compound had directionally lower predicted ice traction and directionally lower predicted wet traction than the control.

Coefficient of Friction using Thrust Washer:

The coefficient of friction was measured with an apparatus that conforms to ASTM D 3702—Test Method for Static and Kinetic Coefficients of Friction of Plastic Films in Self-Lubricated Rubbing Contact Using a Thrust Washer Testing Machine. The counter surface was a silicon carbide 150 grit grind stone. The test method is summarized in prior publications.^{1,3}

The coefficient of friction test was 10 seconds in duration. The peak torque and corresponding surface pressure were used to calculate the peak coefficient of friction (COF). The four-second to six-second average torque and surface pressure were used to calculate the sliding COF. A picture of the test specimen (annular ring) is shown in **Fig. 14**. The

coefficient of friction test was 20 seconds in duration. A sample of the test outputs including torque and surface pressure as a function of time are shown in **Fig. 15**.

This work compared coefficient of friction at dry, wet and simulated ice conditions from 34 to 550 N/cm². The passenger tire

normal pressures are typically in the range of 35 to 70 N/cm². The wet condition was generated by continuous flow of water onto the grindstone. The simulated ice condition was continuous flow of glycerin onto the grindstone during testing.

The results for dry conditions

were plotted with peak and slide coefficient of friction (**Figs. 16 and 17**). The control compound had better (higher coefficient of friction) than the experimental compound at 34 N/cm² normal pressure in dry peak coefficient of friction. The dry sliding coefficient of friction results were not significantly different.

The wet peak coefficient of friction results (**Fig. 18**) showed that the compound with LFBR was not significantly different

than the control compound. The wet sliding coefficient of friction (**Fig. 19**) results were not significantly different. The peak slide coefficient of friction results at simulated “ice” conditions (**Fig. 20**) showed that the compound with LFBR had better predicted “ice” peak coefficient of friction than the control compound at 34 and 69 N/cm² normal pressure. The “ice” sliding coefficient of friction results (**Fig. 21**) were not

See *Silica*, page 24

Table 6: Tire performance predictors.

Compound	Complex Modulus (MPa) at -20°C	Tan Delta at -10°C	Tan Delta at 0°C	Tan Delta at 60°C	Storage Modulus (MPa) at 30°C	Loss Compliance (1/MPa) at 30°C
Control	11.2	0.685	0.413	0.152	1.42	0.125
Experimental	8.81	0.645	0.400	0.147	1.51	0.117

Fig. 11: Storage modulus as a function of temperature.

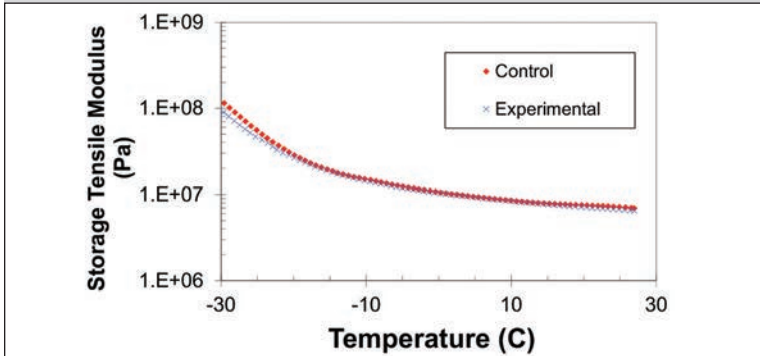


Fig. 12: Loss modulus as a function of temperature.

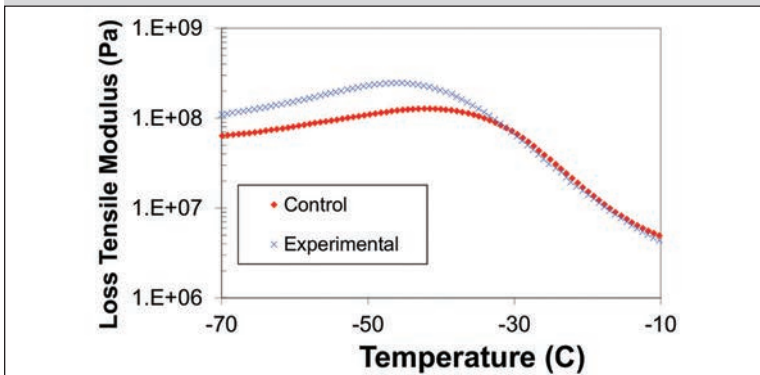


Fig. 13: Tangent delta as a function of temperature.

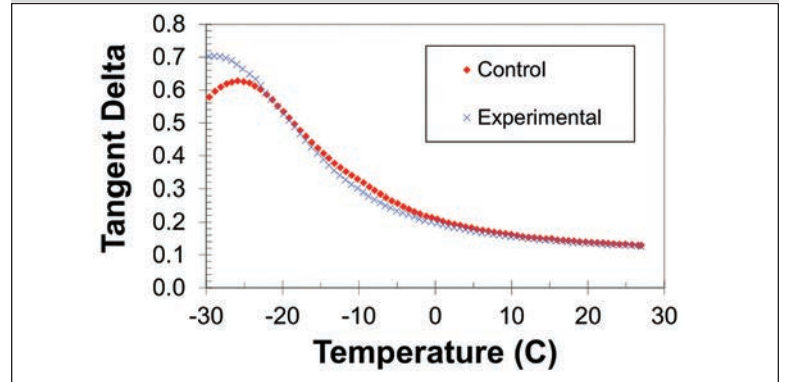
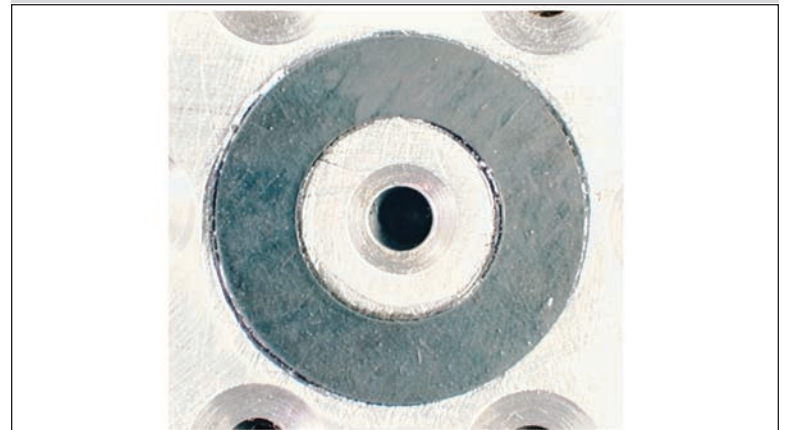


Fig. 14: Annular ring test specimen.



PFAS LIVE

Tuesday, September 26 | 10:00 AM EDT

Join us as we look at current and likely future PFAS regulations and how they will impact companies in the rubber and plastics supply chains.

Featuring:

Jay West

Senior Director
Chemical Products & Technology
American Chemistry Council

Peter Schmitt

Expert on Healthcare
Packaging & MD
Montesino Associates

Moderated by:

Bruce Meyer

Editor
Rubber News

SCAN THE CODE TO REGISTER

or visit RubberNews.com/PFAS/Live



Brought to you by **Plastics News | Rubber News | sustainable**

Technical

Silica

Continued from page 23 significantly different.

RTM Friction Tester (MODEL FR-7225):

The RTM Friction Tester (Rotational Traction Measuring System) (MODEL FR-7225) at Kuraray research labs was used to evaluate the friction properties of the model tire tread compounds using ice conditions on a rotating surface. The ice surface was prepared by pouring distilled water on the surface and chilling to -10°C for 24 hours. The surface was flattened using a cutter before the test. The test temperature was -10°C. The rotation speed was 30 km per hour. The applied load to the wheel was 50 N. The slip ratio was varied from 0 to 20 percent by increasing surface speed while measuring the coefficient of friction. A break-in on dry sandpaper was performed on the rubber wheel prior to the ice mu-slip experiments. The result was normalized to 100 for the control. The experimental compound had indexed rating of 105 (better ice traction than the control).

Abrasion Resistance:

The angle abrasion testing was performed at four severities listed from low to high (alternating 2°/6°, 6°, 12°, and 16°) (Table 7 and Fig. 22). A combination of 2° and 6° (alternating) along with 6° were considered for passenger and light truck tire applications. The 12° and 16° conditions help to predict radial medium truck tire performance.

The angle abrasion testing was performed according to ISO 23233 (first edition 2009-02-15) titled “Rubber vulcanized or thermoplastic—Determination of resistance to abrasion using a driven, vertical abrasive disc.” This ISO method (ISO 23233) was designed for the LAT 1000 (Groshe) abrader; however, it is applicable to the angle abrader.

Fig. 22 is a spider plot of the abrasion results normalized to the control compound. The experimental compound with LFBR had better equal or slightly better abrasion resistance at high severity (12° and 16°). The control compound had better abrasion resistance at low severity (alternating 2°/6° and 6°).

Summary

The following list summarizes the major conclusions:

- The farnesene monomer is a sustainable material.
- LFBR performed as a processing aid which crosslinks into the polymer network.
- LFBR reduced die swell, reduced shrinkage, and increased throughput during extrusion.
- LFBR improved predicted winter traction.
- LFBR shifted the glass transition temperature to lower temperature.
- LFBR reduced predicted rolling resistance (improved fuel economy) slightly at 60°C.
- The compound with LFBR had directionally better “ice” peak coefficient of friction than the control compound at 34 and 69 N/cm² normal pressure. The

RTM Friction Tester (MODEL FR-7225) mu-slip analysis and some of the DMA results supported this result.

- The physically bound rubber and chemically bound rubber were increased by LFBR, suggesting improved polymer-to-filler interaction.
- LFBR improved predicted dry handling and resistance to Mullins softening.
- The compound with LFBR had better abrasion resistance at high severity (16° slip angle). The authors hypothesized that the level of unsaturation in the liquid rubber affected abrasion resistance.

Conclusions

The following summarizes the advantages of LFBR for all-season PCR tires:

- Although the LFBR was

added at a low level, it had a very significant effect on predicted winter traction. With low loading of liquid rubber the compound glass transition temperature (T_g) was shifted slightly to lower temperature.

- The predicted dry handling for the experimental compound was better than the control.
- The predicted rolling resistance was lower (better) in the compound with LFBR.
- The ice coefficient of friction (peak) was higher (better) for the compound with LFBR.
- LFBR performed as a processing aid which contributes to the polymer-filler and rubber networks.
- Higher bound rubber can possibly be explained by the ability of the LFBR to penetrate the filler particle structure more

than the polymer and then cross-link into the polymer network.

References

1. Centea, M, Terrill, E, and Carter, I. “UTQG Tire Traction Rating Comparisons with 0°C Tan Delta and Coefficient of Friction Tread Compound Measurements,” paper presented at the 28th Annual Conference on Tire Science and

2. Lazeration, J.J., Rubber Chemistry and Technology, 60(5), 966-974 (1987).
3. Terrill, E. and Yoshioka, H., “Understanding Traction Enhancers with Ueshima RTM Friction Tester,” paper presented at the Rubber Division American Chemical Society, Cleveland, OH, October 8-10 2019.
4. Wolff, S., Wang, M-J, Tan, E-H, Rubber Chemistry and Technology, 66, 163-177 (1992).

Fig. 15: Coefficient of friction test data example.

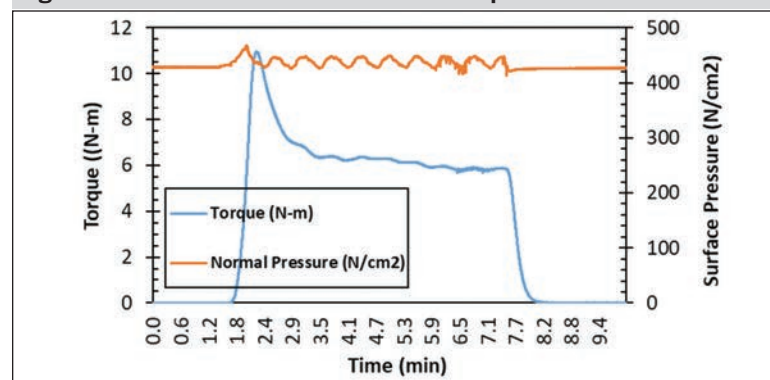


Fig. 16: Dry peak coefficient of friction.

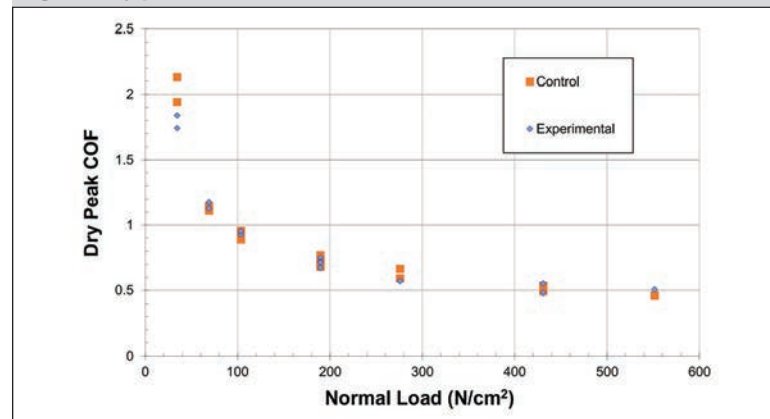


Fig. 17: Dry slide coefficient of friction.

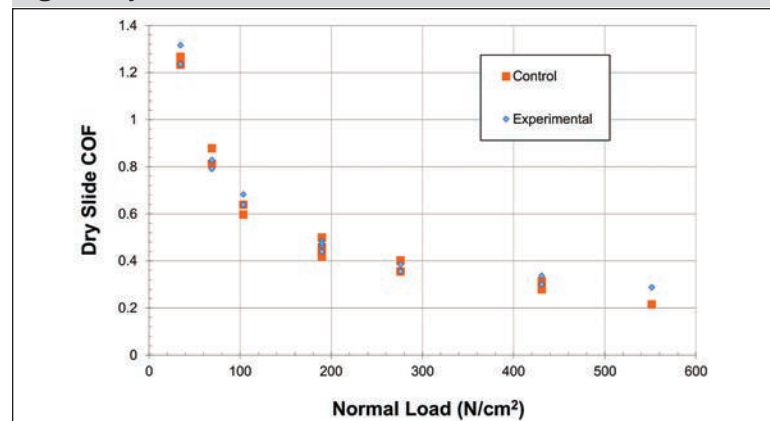


Fig. 18: Wet peak coefficient of friction.

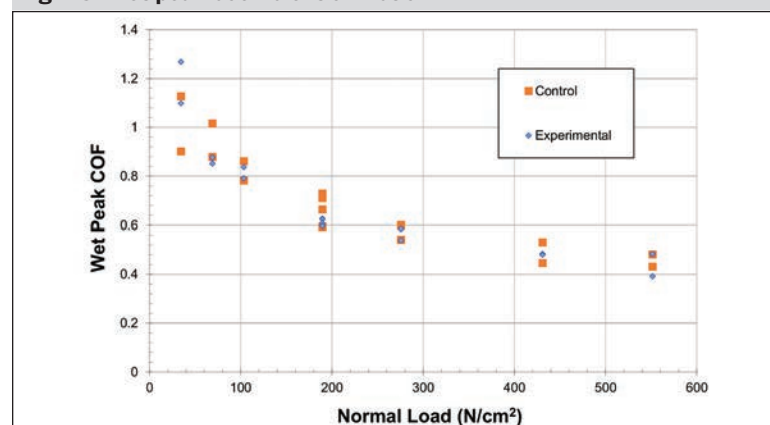


Fig. 19: Wet slide coefficient of friction.

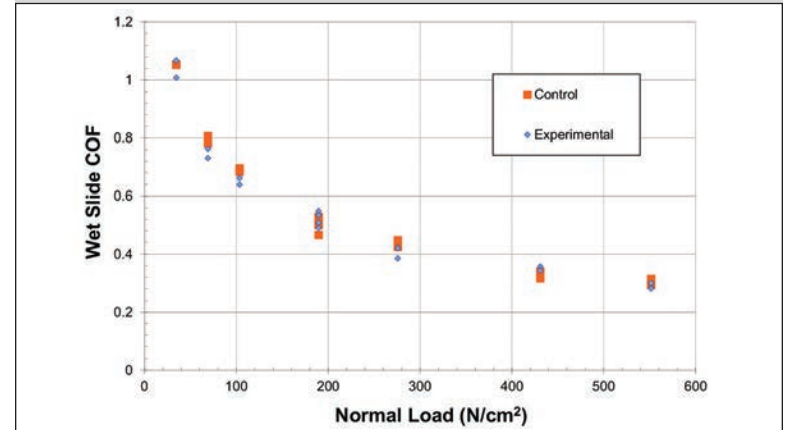


Fig. 20: “Ice” peak coefficient of friction.

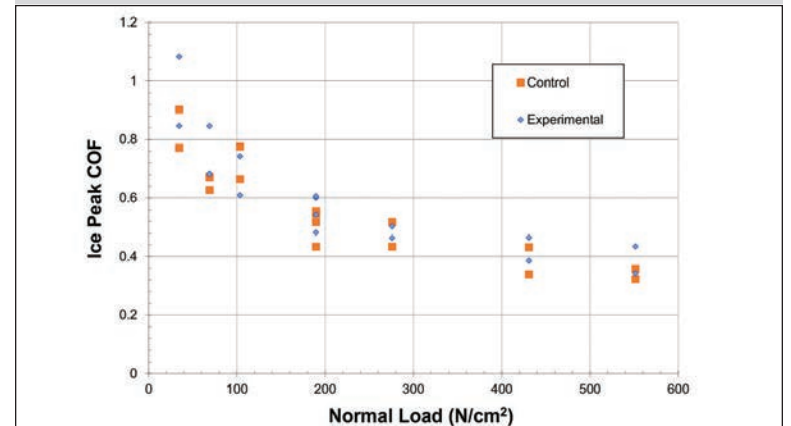


Fig. 21: “Ice” slide coefficient of friction.

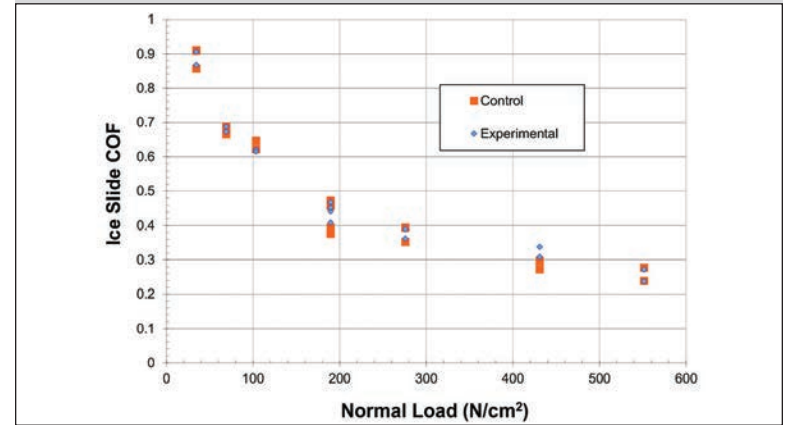
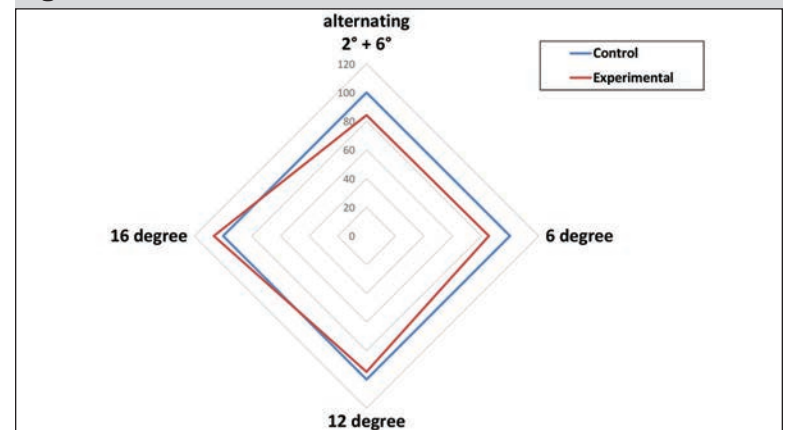


Table 7: Experimental settings for the angle abrader.

Positions on angle abrader	Abrasion Classification	Normal Load (N)	Slip Angle (°)	surface velocity (km/hr)	distance (m) of each measurement	time (min) of each measurement	Approximate number of consecutive measurements (weight measurements)	Grinding Surface	Measure rubber surface temperature
4,8	Low Severity	20	2	8.4	8400	60	5	grindstone	✓
2,6	Medium Severity	38	6	8.4	2100	15	6	grindstone	✓
1,5	High Severity	61	12	8.4	1400	10	9	grindstone	✓
3,7	Ultra High Severity	123	16	8.4	560	4	9	grindstone	✓

Fig. 22: Abrasion results.



Bridgestone

Continued from page 1

silica to more effectively bond with the synthetic rubber in the tire's compound. That means Bridgestone can pull better rolling resistance and wear life—two coveted qualities as EVs emerge—from its tires.

“Enliten, put simply, is maximum performance (and) maximum sustainability,” Bridgestone Americas Communications Director Davis Adams-Smith said. “... It is everything from polymer science and chemical science to new compounds, new tread patterns and everything in between.”

Everything, including PeakLife.

And when that polymeric technology is combined with some of those other sustainability-enhancing, performance-driven technologies in the tire maker's Enliten toolbox, Bridgestone can build a tire that meets the evolving expectations of enthusiasts and everyday drivers. Even those in the ultra-high performance segment.

And it can do so with all-season reliability.

Because PeakLife.

“If we just wanted a tire that wears for 100,000 miles, we can put five more pounds of rubber in it,” Severyn said.

But what good would that do? It's not cost-effective, and it certainly isn't sustainable.

PeakLife, though, is both—economy and sustainability—wrapped into greater performance.

“With the PeakLife polymer, we can maintain less raw materials going into the tire, still deliver that longer wear performance ... (and) depending on the market segment, we can optimize the tire for that segment's parameters,” Severyn said.

Take the UHP arena, where all-season performance matters. PeakLife allows the Bridgestone teams more flexibility in design because they know they won't be sacrificing on key performance parameters that extend the tire's life and minimize its carbon footprint.

“We can put more void in the tread pattern, which is taking away wearable material from the tire, but we can do that because of the PeakLife polymer,” Severyn said. “We can improve the hydroplaning resistance, improve the snow performance.”

Improve it, of course, with that tread design.

After all, said Dale Harrigle, chief engineer for consumer replacement development, “a highly designed tread compound needs a highly designed tread.”

And the Potenza Sport AS, he added, has both.

The tire is especially designed to handle rain and snow with a solid rib for better handling when compared to its predecessor, the Potenza RE980AS+. The newest iteration also has open shoulder slots for improved water evacuation and full-depth 3D “ultra thin” sipes for greater winter performance.

And for Severyn, particularly, the tread pattern itself is proof of how far Bridgestone is taking its products.

“In a sense, some of the technology that we have in this product was probably developed on



Rubber News photo by Erin Pustay Beaven

Dale Harrigle, chief engineer for consumer replacement development, said the Potenza Sport AS handles rain and snow better than its predecessor.

the road of, like, eight years ago and then continuously refined,” Severyn said. “The original RE980 was the first product where we had the 3D sipes, for example, and now we have refined that formula to ultra-thin 3D sipes. (We are) just stretching that performance as we improve our manufacturing processes and the entire tolerances in manufacturing. Thinner sipes really optimize

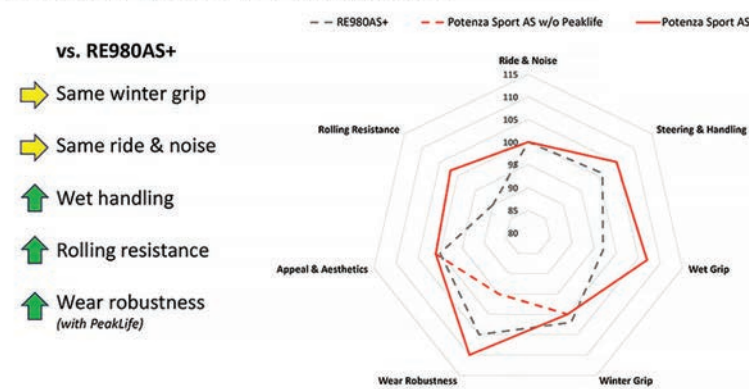
that performance.”

Perhaps one of the reasons the Potenza Sport AS feels so big—so special—is the story behind it.

This tire is more than three years in the making, and has its roots in those uncertain, early days of the COVID-19 pandemic when lockdowns and stay-at-home orders were in place.

“We started working on this through COVID,” Harrigle said, “so

Potenza Sport AS Performance



vs. RE980AS+

- ➡ Same winter grip
- ➡ Same ride & noise
- ⬆ Wet handling
- ⬆ Rolling resistance
- ⬆ Wear robustness (with PeakLife)



The Potenza Sport AS was partially developed via virtual modeling.

there was a lot of difficult challenges in terms of we had to reinvent the way we did some things.”

One of those things was virtual modeling.

Throughout the last several years, Bridgestone has bolstered its virtual tire design and virtual modeling capabilities, allowing engineers and design teams to better understand the intricacies of the tire they build. And that was certainly true for Potenza Sport AS.

“Honestly some of that virtual modeling was out of necessity,” Harrigle said, noting the pandemic was the catalyst that pushed his team to lean more heavily into the predictive technology. “We couldn't just hop on a plane and go to Texas and test a tire. We needed to come up with some other methods.”

What they did, Harrigle said, worked. And the result is a tire that both he and Severyn are proud to put their stamp on.

Bridgestone too.

The Potenza Sport AS is the first North American product to utilize the company's high-con-



trast sidewall technology, which uses lasers to create a clean, dark design that allows both the Bridgestone and Potenza monikers to stand out.

Potenza Sport AS launched initially with 48 sizes. As early as next year, the tire will be available in 76 sizes for rim diameters ranging from 16 to 22 inches, serving drivers who look to maximize the performance of vehicles including sports sedans, sports cars, CUVs and SUVs.

“(This tire) is going to give you the benefits that you love,” Adams-Smith said. “It's going to last longer than you expect, and it is also future-proof for EVs and their applications.”

webinar

Wednesday, October 4, 2023
11:00am EDT

Reduce Raw Material Variation Using Rheometry

Featuring:



RICHARD HANZLIK
Application Engineer
Alpha Technologies

sponsored by



hosted by

Rubber News

Scan Here
to Register!



RubberNews.com/AlphaTech/Variation

Progress

Continued from page 1

Rubber Development Laboratory Inc.—where Stuck serves as president and senior technical adviser—she is far from one of two.

Roughly half of the ARDL employees are female.

Industry evolving

For the rubber and plastics industries, specifically, the percentage of women employed steadily increased between 2017 and 2020. In the years since the pandemic, those numbers have begun to wane.

Women accounted for 25.8 percent of the 529,000 employed throughout rubber and plastics in 2017, according to the U.S. Bureau of Labor Statistics. Those percentages rose to 26.2 percent in 2018 and 28 percent in 2019, before reaching a five-year peak of 32.1 percent by 2020.

Subsequently, the total number employed in the rubber and plastics industries also peaked that year, at 548,000.

Since then, women's employment figures have dipped a bit for the two sectors—along with employment overall.

Of the 525,000 employed in rubber and plastics in 2021, about 31.5 percent were women. Last year, women represented 29.3 percent of the 499,000 employed.

That's a trend that tracks with manufacturing figures, too.

Women represent 47 percent of the U.S. work force overall, BLS data shows, but they only account for 29 percent of jobs in the manufacturing space—which includes rubber, plastics and all other manufacturing sectors.

The non-tire rubber goods sector has seen its employment steadily decline over the last five years, and the percentage of women making up the work force has fluctuated.

In 2018, women made up 27.7 percent of the 87,000 workers in the non-tire space. The following year, they represented 32.2 percent of the 72,000 employed.

From there, the overall employment numbers dipped to 65,000 in 2020; 59,000 in 2021; and 56,000 last year. Women comprised 35.4 percent, 31 percent and 25.6 percent of that work force, respectively, for those years.

On the other hand, the number of women employed in the tire industry is trending upward. In 2017, they accounted for 16.1 percent of the tire industry's 68,000 member work force.

Last year, women represented 30.1 percent of the 66,000 tire industry workers, according to BLS.

There are several factors contributing to this growth, according to BLS, and the pandemic plays a role.

Following the lockdowns and stay-at-home orders, many industry veterans chose to retire, opening the door for younger employees. At the same time, tire plant openings and expansions added to the work force numbers. With the labor shortage in full swing, companies were looking to expand their pool of talent and already had begun efforts to recruit more women.

These combined factors led to



The percentage of women working in the tire industry has more than doubled in the last five years, according to the U.S. Bureau of Labor Statistics.

the surge in employment for women, BLS said.

That's good news. And while they applaud that growth, women across all sectors of the rubber industry also would contend it's just the start—an indication of how the industry can and should go.

Marjolein Groeneweg, global marketing director of synthetic rubber for Synthos S.A., is one of them.

Advocates for diversity

Admittedly, Groeneweg is at times discouraged by the representation of women across every facet of the rubber industry.

"I remember when I started working in the industry. I was young. I was as passionate as I am today," Groeneweg said. "I generally felt that by the time I am of the age that I am now all would be equal. There would be no difference between men and women. And that's still not the case."

Groeneweg, though, loves this industry. It's the reason she sees its potential and wants to see it grow stronger. And it can do that with representation.

Most companies, she said, don't reflect the diversity in the world around them.

"When I look and see people celebrating certain events, signings—these kind of things—sometimes there are one or two women, but very often it's only men that you will see in those pictures," Groeneweg said. "That, for me, is not representative of the world we live in."

"I don't want to look at 'people sitting around the table who are all wearing similar outfits, who all have similar haircuts, who wear the same shoes, and they talk about the same thing' pictures," Groeneweg said. "That is not diverse. And it doesn't make any difference whether it's male or female. It is really about getting that balance of different ideas, different thoughts and different backgrounds as well."

That's the kind of diversity that Juliane Hefel advocates for. She, too, wants to see the rubber industry grow, adapt and diversify. And she has vowed to use her voice and talents to make that happen.

"I am also a believer that diversity drives better business results," said Hefel, general manager for PPG Specialty Coatings and Materials. "In particular, in today's complex world, we need

more diverse voices than ever to succeed."

That's why Hefel uses her voice to help others raise theirs.

"I am paying attention," she said, "to be sure that all voices are being heard equally and that everyone is being part of the conversation, whether it is asking team members that normally don't speak up in group situations about their opinions or being an advocate for our women's group leadership network across PPG."

But there's also part of Hefel that uses her voice because she—like Stuck and Groeneweg—understands what it's like to be an "only" in the room.

"If you look at myself, I am an outlier in the field that I am operating in," Hefel said. "So, I think by default, I am looking for allies. I am looking for people who look like me, which makes this topic (of advocacy) something that is near and dear to my heart."

Opportunity and compensation

Advocacy is a critical tool for ensuring that women are granted opportunities to prove themselves and their capabilities. Because women, Hefel said, still are often overlooked for promotions, even when they have proven they have earned the opportunity.

"I do feel that, every now and then, we do have to prove ourselves twice and three times before we can be considered for the next move," Hefel said. That was, after all, the case for her career.

"What helped me, in particular, was being persistent and being very outspoken about where (I) want to go," she said.

Hefel, certainly, is not alone in believing that her advancement opportunities may have been unnecessarily delayed.

The Manufacturers' Alliance Foundation, in a July report—titled "In Her Own Words: Breaking the Glass Ceiling is Good for Business"—detailed the results of a survey in which they asked men and women if they believed promotions at their company were biased by gender/sex. Men—78 percent in all—said they thought promotions were not influenced by gender.

But 52 percent of women responding to the survey said they believed the promotions were, indeed, gender-biased.

There are a number of factors that may impact the ability of women to move into executive positions or higher-level managerial roles, and they are extremely nuanced. Still, there are bias-

es—often implicit—that could be holding women back.

Just look at manufacturing.

While it's true manufacturing mirrors the public sector in that roughly one in four management positions are held by women, they represent just 12 percent of manufacturing's C-suite positions.

And women represent almost 30 percent of its work force, while making up 47 percent of the U.S. work force overall.

The divide in opportunity is bearing out in pay gap figures—for manufacturing and beyond.

BLS data indicates that the pay gap across all industries and sectors widens over time, an indication that perhaps men are receiving pay increases and promotions at rates higher than women.

That said, it should be noted that the pay gap is narrowing for every age range, but it is doing so

more quickly for the youngest generations—typically those with base salaries.

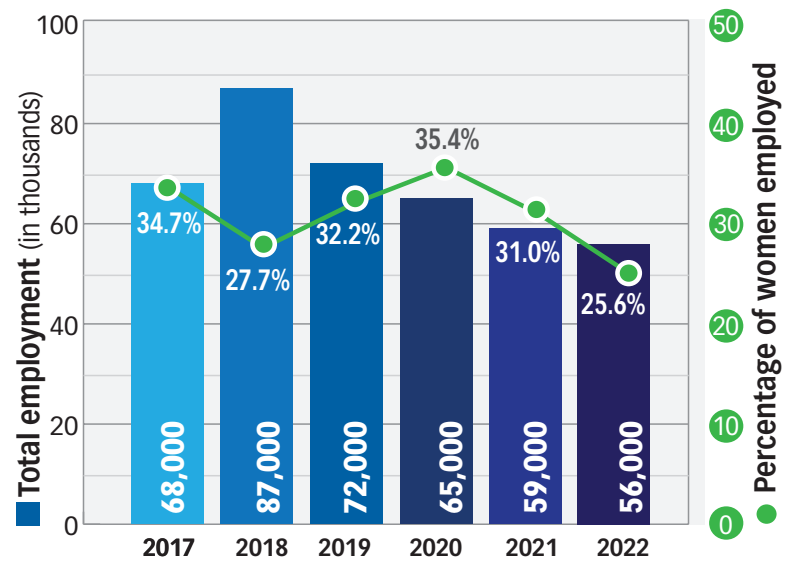
For full-time salaried employees between the ages of 25 and 65-plus, the most notable change may be for women ages 35-44. In 1980, their median incomes were equivalent to 58.3 percent of the salaries of men the same age. It was the lowest percentage for all age brackets.

But by 2021, the gap had narrowed to almost 80 percent, the second-highest for the age groups being paid salary wages for full-time work. The percentage was highest for women ages 25-34, who made 90.6 percent of men's salaries.

For remaining age groups in the category, BLS data shows the following pay gap percentages in 2021:

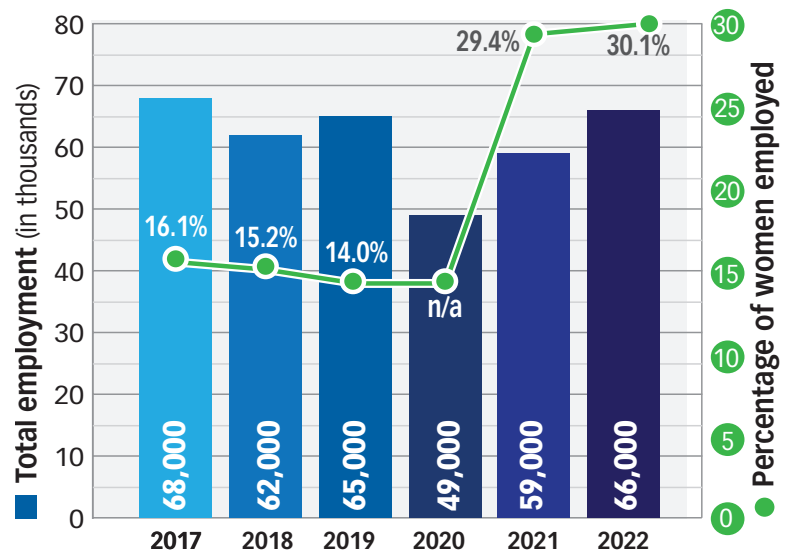
See Progress, page 27

WOMEN IN THE NON-TIRE RUBBER INDUSTRY



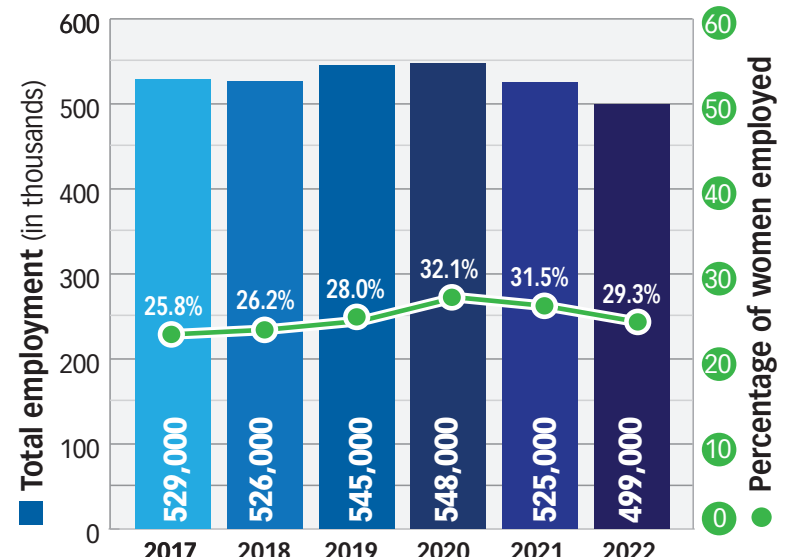
Source: U.S. Bureau of Labor Statistics

WOMEN IN THE TIRE INDUSTRY



Source: U.S. Bureau of Labor Statistics

WOMEN IN THE RUBBER, PLASTICS INDUSTRY



Source: U.S. Bureau of Labor Statistics



Groeneweg

Progress

Continued from page 26

- Ages 45-54 – 78.1 percent
- Ages 55-64 – 77.7 percent
- Ages 65+ – 76.8 percent

A manufacturing point of view

A recent survey conducted by the Manufacturers Alliance sheds light on the differing perspectives between men and women, particularly as it relates to the manufacturing industry's progress.

When asked if the manufacturing sector made significant progress toward equity in both pay and opportunity, 82 percent of the men surveyed said "yes."

Just 38 percent of women said the same.

"Yes, women are increasing their share of employment in manufacturing, but the pace is very slow," a report from the Manufacturers Alliance said in the July report. "... We are marching in place."

The report also pointed to the growth manufacturing is experiencing. From 2010 to 2021 less than 500,000 women in the U.S. took jobs in manufacturing—all sectors, both inside and outside of rubber.

And U.S. Manufacturing is growing, the alliance said. Manufacturing is on pace to employ 12 million by 2031. And women are expected to represent about 30 percent of the manufacturing work force—nearly the same percentage as today.

"Especially after COVID, women took a really huge step backward in the workplace," Jacquie Boyer, senior vice president and chief commercial officer at Sensata, told Manufacturers Alliance Foundation. "Prior to COVID, the World Economic Forum was saying women were going to reach parity with men globally in about 60 years. After COVID hit, it was more than 130 years. And that statistic hit me like a ton of bricks."

"So it wasn't going to happen in my lifetime. It wasn't going to happen in my daughter's lifetime, and it wasn't going to happen in my granddaughter's lifetime. That made no sense to me."

Representation, encouragement

Victoria Rooke is where she is because of the women who came before her.

And she is determined to be the reason someone else finds their place in manufacturing.

Rooke, a 24-year-old CNC ma-



More women are joining the rubber industry, building careers in STEM-related fields.

chinist and team leader at Westminster Tool Inc., is one of the youngest, most cross-trained employees in the company. She is driven by a deep-seeded desire to learn and grow professionally.

But she's also found a lot of inspiration along the way. She's listened and learned from other women in the industry—some of whom were the impetus behind her pursuit of a career in manufacturing.

And just as they inspired her to build a career in rubber and plastics, they also inspired her to give back to the industry—to advocate for it. She hopes to do exactly that by inspiring girls and women in her small community and beyond.

She volunteers for advocacy groups such as Women in Manufacturing, Manufacture Your Future and other Connecticut work force development programs aimed at attracting women to manufacturing. Some of the programs she partners with mentor students as young as first grade.

"STEM education needs to start young, and truly needs to be made available at any age, whether it is at community colleges or workshops," Rooke said. "They need to be able to dip their toes in to see if it is something they would be interested in pursuing."

One of the best ways to encourage females to pursue STEM, Rooke said, is to give them an environment where they can experience and see it in action.

"Exposure and empowerment are what we need more of," Rooke said. "Females have been generally taught that they weren't smart or capable enough to work in STEM, but that couldn't be

any farther from the truth."

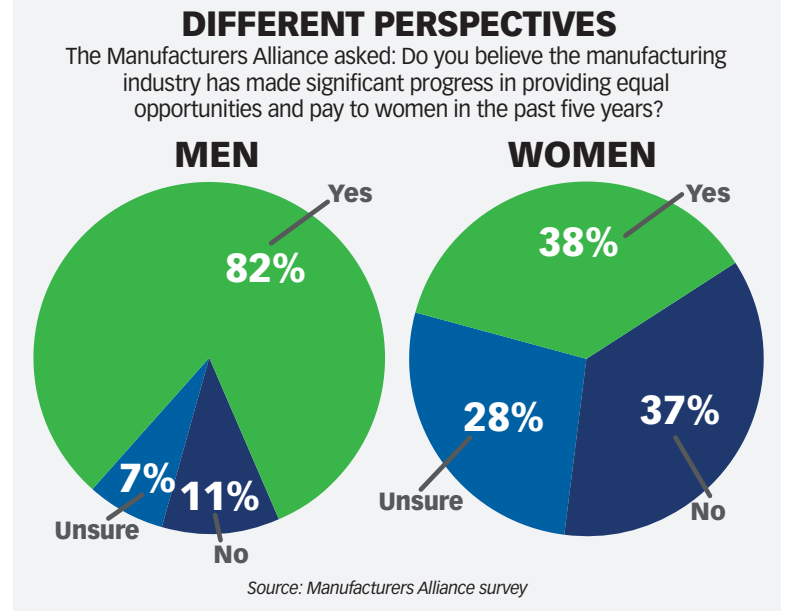
Because the truth is that women are driven, she said.

According to the BLS, women are pursuing higher education—and subsequently higher levels of employment—at higher growth rates than men.

Twice as high, actually.

From 1970 to 2021, the proportion of women ages 25-64 in the labor force who held a college degree more than quadrupled. During that same period of time, the proportion of men in the labor force with a college degree more than doubled.

In 1970—just seven years before Stuck took her first job in rub-



ber—11.2 percent of women held college degrees, and 33.5 percent of women in the labor force had not received either a high school diploma or an equivalent.

As of 2021, 47.6 percent of women ages 25 to 64 held a bachelor's degree or higher, and less than 5 percent of women in the labor force had less than a high school diploma.

That trend could continue, and rubber industry firms could stand to benefit—especially if women across STEM-related fields continue to be visible, vocal proponents for their industries.

Stuck, Groeneweg, Rooke and Hefel are certainly among them.

"There are two things that I

personally do, and one is sharing my story, which is all about thriving as a woman in a nontraditional environment," Hefel said. "I hope that will encourage other female talents to dive into male-dominated environments, and at the same time, show them that it is absolutely possible to have a successful career in such fields."

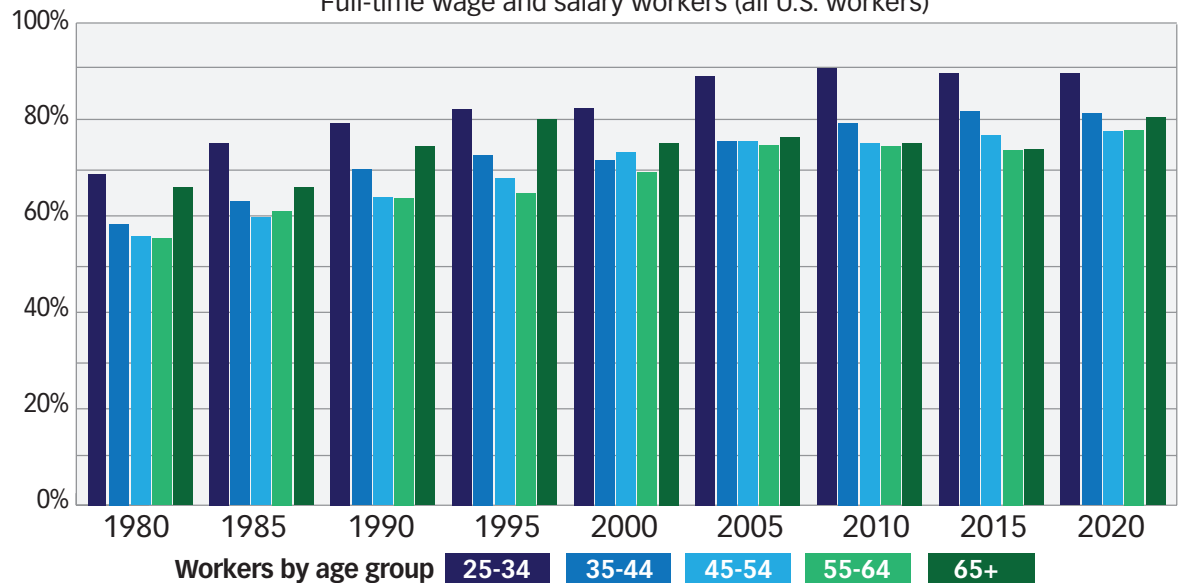


Hefel

Rubber News Editor Bruce Meyer and Correspondent Patricia Faulhaber contributed to this report.

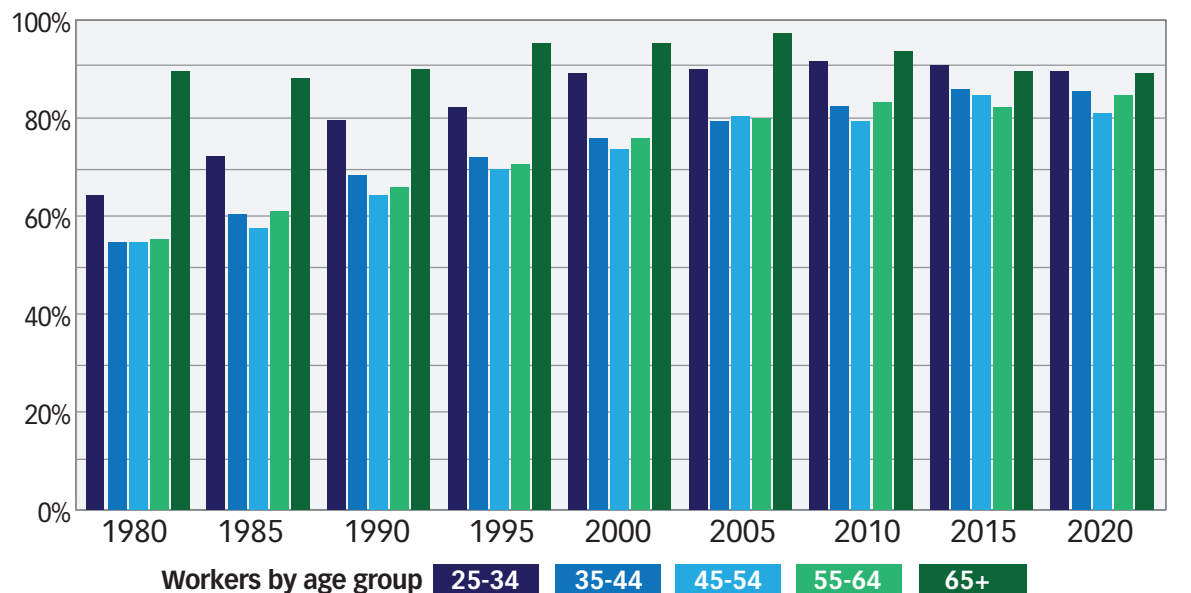
THE PAY GAP: How women's salaries measure up over time

Women's earnings as a percentage of men's salaries
Full-time wage and salary workers (all U.S. workers)



THE PAY GAP: How women's salaries measure up over time

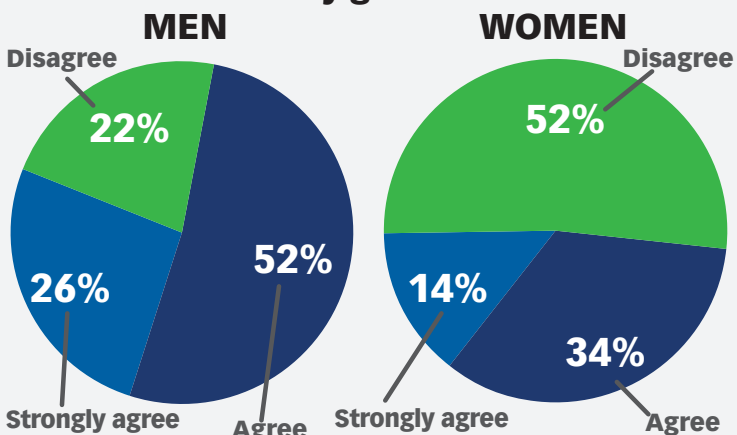
Women's earnings as a percentage of men's salaries
Wage and salaried employees paid hourly (all U.S. workers)



TWO POINTS OF VIEW

The Manufacturers Alliance asked survey respondents to rate their level of agreement with the following statement:

My company promotions are not biased by gender/sex.



Source: Manufacturers Alliance survey



**Congratulations on your
2023 Women Breaking
the Mold Nomination, Ellen!**

**Ellen Clunk
Chief Procurement Officer
HEXPOL Compounding Americas**

www.HEXPOL.com/Rubber