



## RESINS TECHNOLOGY MANUFACTURER HEXION HAS CRUCIAL ROLE ON MANY FRONTS

The company sees itself as a leader in the industry, with its products and its activism.

BY RICH DONNELL

**T**he North America building industry, and the worldwide one as well, continues to grow, wood products manufacturers continue to increase production, and resins technologies provider Hexion Inc. continues to enhance its position as a primary partner with all of the panel and engineered wood production segments of the industry and as a visible and leading proponent of the industry.

Based in Columbus, Ohio, Hexion is structured with a Forest Products Division and an Epoxy, Phenolic and Coating Resins Division (that serves a range of industries such as automotive, electronics, aerospace, etc.). The Forest Products Div. operates up to 40 facilities globally, two dozen of which are in North America.

For forest products, Hexion is known for its urea formaldehyde-based, Eco-Bind low emitting resin systems for hardwood plywood, particleboard and MDF; phenolic resins for plywood, OSB and engineered wood products such as glulam; melamine resins for laminate applications; wax emulsions and various additives.

Hexion was formed in 2005 through the merger of Borden Chemical, Inc., Resolution Specialty Materials Inc. and Bakelite AG, the latter of which dates back to 1907. Hexion Specialty Chemicals Inc. and Momentive Performance Materials Inc. combined in 2010 to form Momentive Specialty Chemicals Inc., which subsequently changed its

**Senior VP Americas for Forest Products Resins, Mark Alness**



name to Hexion Inc. in 2015. Hexion is controlled by investment funds affiliated with Apollo Global Management.

One of Hexion's central and familiar figures is Jody Bevilaqua, named Chief Operating Officer a year ago overseeing both business divisions. Most previously, for eight years, he was executive vice president of the company and president of the Epoxy, Phenolics and Coating Resins Div., and for four years prior to that he was executive VP and president of the Forest Products Division. He joined the company in 2002 in corporate strategy and development. He reports to Craig Rogerson, Chairman, CEO and President of Hexion Inc.

Bevilaqua says that despite the steadily improving building economy and related panel manufacturing uptick, in addition to anticipated demand caused by the two recent hurricanes in the Southern U.S., forest products resins capacity or volume availability is not a current problem in North America.

"You always have that moment when everybody decides to order, that instantaneous impingement is always there, but if you look at an average ratable volume there's really not an issue with availability," Bevilaqua says. "We're well inside our customers' construction window."

Customer relations is a major emphasis for Hexion, especially given a producer company's typically long-term plans and the time it takes to execute those plans because of the size of the production facilities.

"One of the keys for us is to have clear and open communication with our customers," Bevilaqua says. "We work hard to keep it confidential. That becomes very critical. We do a very good job of compartmentalizing. The industry does a very good job of having long-term plans, and we can usually make our investment inside their window for a new plant. We normally can work our way through federal permitting processes inside that time frame and make the necessary investments to supply the volume."

Another key figure at Hexion is Mark Alness, named Senior Vice President Americas for Forest Products Resins last January. His history with the company dates back to 1978 when he joined Borden Chemical.

Alness emphasizes Hexion's devotion to not only maintaining production capacities to meet the market's needs when it's hitting on all cylinders, but to a continued commitment to research and development of resin technologies.

He points to more than \$125 million



**Chief Operating Officer of Hexion, Inc.,  
Jody Bevilaqua**



invested in several plants in recent years, including an expansion of formaldehyde production at Curitiba, Brazil, where they've also ramped up wax emulsion production, and in Geismer, La. and Luling, La., the latter two with 400,000 metric tons combined of formaldehyde production capacity per year.

The Geismer formaldehyde facility feeds to MDI customers as well as into Hexion's amino and phenolic resins; while the Luling plant serves an adjacent Monsanto Company chemical plant by providing formaldehyde through a direct pipeline.

The company most recently has expanded its technology lab in Edmonton, Alberta. The plant there, which dates back to Borden Chemical, supplies all panel resins. The R&D facility now has a new building and new equipment including a scale press.

"We are making experimental panels on new chemistries at the lab," Bevilaqua says, mostly around OSB, using sustainable

**Hexion's upgraded tech center in Edmonton keeps the company at the forefront of product capabilities.**



raw materials such as lignin and other green feedstocks in combination with classic materials. "There are a lot of novel chemistries," he adds. "We found it was in our best interest to put in a line at Alberta that can push the moment. It gives us a chance to be much quicker in our development cycle."

However, Bevilaqua notes that Hexion is a bit more conservative and prefers evolutionary advancement. "We think that with the commitment of our customers on such a large scale it's best to fit into current footprint and gradually make the move to a more green adhesive. We believe hybrids work, they work in our reactors, they pass the test in being economically beneficial and in large enough quantity that our customers can dedicate a line or part of a line."

Hexion continues to play an integral role in regulatory development, much as it did in the transition to CARB 2 for composite panel and non-structural

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resins. Alness notes that when CARB rolled out, everybody assumed they would have to use 10-15% more resin and lose 10% of productivity, but today productivity is probably better and the cost is the same. "It was a huge technological effort that's now starting to happen in Latin America because they export significant product to here," Alness says.

Meanwhile, there is ongoing discussion on the structural side concerning phenolic formaldehyde resins with regard

to preliminary determination and assessment of cancer risks reached by EPA and the Integrated Risk Information System, with questions about the EPA/IRIS methodology and interpretation.

Alness isn't shy about promoting the environmental friendliness of the wood products industry. He cites a recent calculation that Hexion customers produce about 30 million cubic meters annually of wood products globally, which translates to the sequester of 30 million metric tons of CO<sub>2</sub>, which is

equivalent to taking 19 million cars off the road forever every year. And he notes it only takes 60 days to replace the 30 million cubic meters with wood that's grown back.

"This is a story that industry needs to promote," Alness says, "especially looking at marketing to a new generation of millennials who want to have an impact and who take this very seriously. This is one area where this industry has a huge opportunity, visibly and scientifically, to reach out and increase the awareness and importance of using wood. To me, Hexion makes the enabling technology for producing the most sustainable building products on earth."

Alness is hopeful that such a message can attract young workers to the wood products industry. "Creating jobs in rural areas is difficult," he says. "The jobs in these new modern plants are very sophisticated, really good jobs, but we have to attract them."

Alness believes carbon sequester and sustainability are major reasons why cross-laminated timber construction has garnered such interest particularly in the Western U.S., with multi-story buildings composed of CLT replacing traditional steel and concrete structures.

Speaking of the product, however, Alness points to the issue of heat durability, and of looking at the engineered wood product and the adhesive that holds the product together. More specifically he says there are issues with thermoplastic adhesives melting and falling away. "When you start talking about 20 story buildings, you can't have an adhesive that's structurally deficient. We're working on it," he adds, noting that the issue has led Hexion into developing technology that they used in other applications such as laminated beams.

Bevilaqua emphasizes that Hexion's lab work just as importantly focuses on how adhesives fail. He praises cross linkable chemistry that "performs significantly longer in testing." Building code bodies are playing a crucial role in this development as they wrestle through what is the right code. "These code issues take time," he adds. "It's the proper way to go about it."

Both Bevilaqua and Alness express optimism over the growth and demand of the building products industry for several years going forward.

"The economies are moving up, we're in for a really really good run here," Alness says. "We're trying to make sure we're prepared for it, both in capacity and continued investment." **PW**



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