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Variety of bio-based plastics poised to make mark at NPE

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PLASTICS NEWS STAFF

AKRON, OHIO (May 11, 1:35 p.m. ET) -- Bioplastics will be in full bloom at NPE2009.

At least 38 exhibitors will be showcasing efforts to make plastics out of biodegradable or renewable resources. The list includes materials firms Teknor Apex Co. of Pawtucket, R.I., Cereplast Inc. of Hawthorne, Calif., and Telles LLC of Lowell, Mass.

Teknor Apex Bioplastics Division (Booth W132055) entered the bioplastics market last year when it signed an exclusive global license to make and market starch-based bioplastics using technology provided by Cerestech Inc. of Montreal. Teknor, which ranks among North America's 30 largest compounders, now has a separate business unit devoted to the bioplastics effort.

Bioplastics at work: From left, a cosmetic jar made using Cereplast's hybrid resins, containers produced with PolyOne's OnColor Bio color concentrates and trash bags produced using Teknor Apex's Terraloy compounds

The firm is operating about a million pounds of bioplastics capacity on a pilot line in Pawtucket. Production there could reach 5 million pounds in early 2010, officials said.

Teknor officials "felt that bioplastics was an area of growth and we looked for appropriate technology where we also could use our compounding expertise," Robert Brookman, senior vice president, said in a recent phone interview.

The Cerestech technology "is able to blend in starch without losing the characteristics of the host polymer," he added.

A common blend produced with the technology would be a material consisting of 70 percent polyethylene and 30 percent starch. Such a material would not be biodegradable, but would have a lower environmental impact because of the renewable nature of its starch component, Brookman explained. A 70-30 PE-starch blend also would be less expensive than "stand-alone" bioplastics, according to Brookman, since starch currently sells for 20-25 cents per pound.

In addition to the PE grade, Teknor is producing a bioplastic compound based on Bioflex-brand

biodegradable polyester provided by BASF Corp. Both the PE and Bioflex products are drawing interest in bags, packaging films and other applications, Brookman said.

At **Cereplast (Booth W11a)**, the firm has commercialized four new grades of bioplastic since late 2008. Two of the grades are Hybrid-brand compounds for durable applications, while the other two are Compostable-brand materials for foam and blown film applications. Cereplast bases its materials on polylactic acid resin sourced from NatureWorks LLC of Minnetonka, Minn.

Later this year, Cereplast expects to launch at least two additional grades — one with higher impact resistance and another for bowls and other types of kitchenware, according to Philippe Ravera, senior vice president.

The firm also recently reached a supply agreement with Warner Manufacturing Co., a Minneapolis-based firm that will use Cereplast materials in putty knives, scrapers and other painting accessories. Other recent areas of interest include single-use applications in foodware, food service and cutlery, dental products like toothpicks, floss and toothbrushes, toys and film for small waste bags and wrapping.

“Our message is that processors shouldn’t look at our products as a polyethylene or polypropylene drop-in, but as a new generation of plastics,” Ravera said.

Telles (Booth W119020) — a joint venture between Metabolix Inc. of Cambridge, Mass., and agricultural giant Archer Daniels Midland Co. of Decatur, Ill. — will roll out two new grades of its sugar-based polyhyrdoxyalkanoate (PHA) resin. One is an improved injection molding grade, the other is a new film grade, according to Robert Findlen, vice president of sales and marketing at both Telles and Metabolix Inc..

The new injection molding grade “improves the window between fill-up and flashing,” Findlen said. It’s expected to be used in food and nonfood utensils in the consumer retail market. The film grade looks to find a home in agricultural film and compostable bags.

Telles also plans to open its first full-scale production plant — a 110 million-pound-capacity facility in Clinton, Iowa, during the fourth quarter.

Teknor Apex, Cereplast, Telles and other firms are trying to make bioplastics work in a tough economic environment — one in which consumers are hesitant to pay a premium for any type of product, even one with environmental merits.

“The dilemma is whether the consumer will pay for being green,” Teknor’s Brookman said. “A lot of companies want to say their products are biodegradable or use renewable resources. There are a lot of big consumer- products companies looking into this market.

“Interest is still very high. We just have to sort through and determine which ones are real,” he said.

“We still get a lot of requests and phone calls every day,” added Ravera at Cereplast. “Customers’ brains are still working, but when you talk about costs, there’s a few seconds of silence.

“Commodity prices have fallen and there’s still the question of whether consumers will be ready to pay the extra penny,” Ravera said. “Some of our customers have projects at a standstill because they’re concerned about marketability.”

Those concerns apparently have spread to the new bioplastics plant that Cereplast is building in Seymour, Ind. Company officials had planned to start production there last year, but now are hoping to do so by the end of 2009.

Ravera and Brookman both agreed that consumers seem willing to pay a premium of 10-20 percent for goods made from bioplastics, but they become less likely to do so at higher levels. Broader economic factors also are affecting the market, including vast movements in the price of oil – which affects prices for conventional plastic resins — in the last 18 months.

"There's not just slack in demand for bioplastics — demand's down for everything," Brookman said. "And a higher-cost packaging material isn't always a popular theme right now. But if a couple of big [consumer-product] companies got into it, the others would have to do the same thing to meet demand."

At Telles, Findlen said the firm is taking a slightly different approach.

"Some [bioplastics] companies are trying to compete on a price-per-pound basis, but we're trying to create opportunities for our customers to create new brands," he said. "The price of oil hasn't had an impact on our programs because we're going after something different."

Other exhibitors spreading the word on bioplastics at NPE include:

BASF Corp. (Booth W127020): Blends of PLA with biodegradable copolyester. Also nylons and polyols derived from castor oil.

Biopolymers and Biocompsites Research Team (Booth W118027): Research into polymers derived from protein, oil and cellulose.

DuPont Co. (Booths W113011, W121011): Thermoplastic elastomers partially derived from corn sugar and nylon partially derived from castor beans.

Ex-Tech Plastics Inc. (Booth W118029): Film and sheet products extruded from NatureWorks PLA.

Hallink RSB Inc. (Booth W131046): Turnkey stretch blow molding systems for bottles based on bioplastics.

IDES (W128031): Plastic materials database that can be searched for plastics that are biodegradable, include recycled content or are derived from renewable resources.

Kingfa Science & Technology Co. Ltd. (Booth W103023): PLA and polybutylene succinate (PBS) bioplastic resins.

Merquinsa North America Inc. (Booth W131043): Thermoplastic polyurethane elastomers with plant-oil content as high as 60 percent.

Ohio Bioproducts Innovation Center/Ohio Economic Development Association (Booth W101028): Research into use of agricultural products as feedstocks for bioplastics.

Plastic Technologies Inc. (Booth S26081): Materials development and design services for packaging based on PLA and other bioplastics.

PolyOne Corp. (Booth W113021): Compounds based on polyhydroxybutyrate valerate (PHBV) and plant-derived TPUs. Also modifiers and colorants for bioplastics.

Polyvel Inc. (Booth S3042): PLA masterbatches for impact modification, melt strength, mold release, antiblock and other functions.

Department of Agriculture (Booth W18a): Promotion of plant, animal, marine or forest products as feedstocks for biopolymers.

United Soybean Board (Booth W130053): Promotion of soybean oil and protein as feedstocks for polyols and plasticizers.

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