

## US Bioplastics Demand Growing 20% Annually

Source: European Plastics News

Posted: July 10, 2012

US demand for bioplastics will grow 20% annually through 2016 to reach 550 million pounds (249,000 tonnes), according to a new market study. US bioplastics sales will reach \$680m (€552m) in 2016, thanks to technical innovations that enhance the properties of the materials and lower their price, according to the report from US-based Freedonia Group.

Biodegradable resins accounted for the vast majority of bioplastics volume in 2011, but the emergence of non-biodegradable bioresins will dramatically alter the market, according to the report. By 2021, these materials will represent more than two-fifths of volume demand, up from 13% in 2011. Growth will be propelled by large-volume production of bio-based polyethylene, as well as the eventual commercialization of bio-based PET, polypropylene, and PVC.



Polylactic acid (PLA) is expected to remain the most extensively used resin in the bioplastics market through the forecast period. But bio-based polyethylene – which entered the market in 2010 – is expected to offer the best opportunities for growth through 2016, increasing rapidly from a small base.

## Cardia Bioplastics and Alto Packaging Announce Renewable Packaging Partnership

Source: Cardia bioplastics

Posted: July 9, 2012

Alto Food Packaging is renowned for delivering exceptional innovation in rigid packaging solutions for fresh food. A key part of the Company's innovation is based on principles of sustainability. As a result, Alto is proud to be in collaboration with Cardia Bioplastics to produce high performance packaging solutions, manufactured with Cardia's novel thermoplastic starch resins.



"Packaging is an integral part of modern day living and we use it in nearly every thinkable industry," said Dr Frank Glatz, Managing Director of Cardia. "For this reason, the development of packaging solutions with improved environmental properties, through the use of renewable components, is important for the packaging industry to consider." "By incorporating our thermoplastic starch resins into their packaging systems, Alto Packaging is taking significant steps to reduce the environmental footprint of their packaging products," said Dr Glatz.

Initially focusing on fresh food packaging, the new packaging will be manufactured with Cardia's bioplastic resins, which have a higher renewable content and lower carbon footprint than conventional resins. Furthermore, they are compatible with current plastic recycle processes and will be food safe compliant. Cardia's Biohybrid™ resins combine renewable thermoplastics with oil-based polymer material to reduce dependence on finite oil resources and to reduce carbon footprint. The renewable material is derived from corn crop grown for industrial use. Ron Starnes, Technical Manager of Alto Food Packaging, said: "Alto Packaging is proud to be working in partnership with Cardia Bioplastics to produce high performance packaging solutions with improved environmental attributes."



"We are serious about creating a more sustainable future through the use of more renewable materials, and we are looking forward to working with Cardia Bioplastics to bring more environmentally-friendly packaging solutions to the market, in Australia and in New Zealand through Alto and associated group companies," Mr Starnes said.

## Goodfellow Introduces Range of Biopolymers to Cater to Growing Demand from Product Developers

Source: SpecialChem

Posted: July 5, 2012

After years of being on the fringes of commercially viable polymer development, biopolymers - polymers produced from living organisms - are coming into their own. They have obvious environmental advantages over oil-based polymers: they are made from plant materials that can be grown to match demand, making them sustainable and renewable. In addition, biodegradable biopolymers are close to carbon neutral, since CO<sub>2</sub> released when they degrade can be reabsorbed by crops grown to replace them.

Historically, however, high price, inconsistent quality and often inferior performance compared to their oil-based counterparts made biopolymers a niche product with limited application. Times are changing. Propelled by the ever-increasing cost of oil as well as improvements in processing technology and product consistency, today's expanded range of biopolymers are competitively priced, commercially viable materials with overall performance that matches their oil-based equivalents.

Current applications for biopolymers include many types of packaging (food trays, thin films for wrapping, blown pellets for cushioning fragile goods in transit) as well as non-packaging items such as toothbrushes, razors, pens, cutlery and coffee cup lids. As the list of sought-after performance characteristics grows with the expanding range of biopolymers available, additional innovative applications will inevitably follow.

Goodfellow, a global supplier of polymers, metals, ceramics and other materials for science and industry, has assembled a range of biopolymers to address growing demand from product developers. Their current range focuses mainly on biodegradable polymers such as:

Polyhydroxybutyrate (PHB) - granules, film, sheet and rod

Polyhydroxybutyrate/Polyhydroxyvalerate - (PHB/PHV) - granules, film and powder

Polyhydroxyalkanoate (PHA) - granules

Polyhydroxyalkanoate wood flour composite - granules

Polyhydroxyalkanoate elastomer - granules

Poly L lactic acid (PLLA) - granules and film



The company also offers natural (flax) fiber and fabrics, co-mingled fibers (flax/PLA and flax/PP), co-mingled fabrics (flax/PLA and flax/PP) and pre-consolidated composite sheet (flax/PLA and flax/PP). Additional polymers, fibers and composites from sustainable resources will be added as they become available.

## Bioplastics Production to Hit 1 Million Tons

Source: EUROPEAN PLASTICS NEWS

Posted: June 28, 2012

Total global production of bio-based plastics will reach 1 million metric tons annually within a few years, up from about 700,000-800,000 metric tons today, according to Michael Carus, managing director of the Nova-Institut GmbH. Manufacturers are increasingly turning towards biomaterials not only to reduce carbon dioxide (current emission reductions average 20-30 percent), but also to save fossil resources, Carus said at the Biobased Based Materials Symposium, held June 21 in Wageningen.

Carus estimates that bio-based polymers currently account for about 7.7 percent of the market — an estimate that's higher than others', but it includes some materials that are often overlooked. "When we talk about bioplastics and bioproducts, we can also think about elastomers, man-made fibers, even some sustainable rubber products," he said. "These can all help with sustainability."

Carus quoted an analysis of life cycle assessments carried out by Hürth, Germany-based Nova-Institute on behalf of Proganic GmbH & Co. KG, which revealed that the biggest greenhouse gas emission savings can be found when comparing bio-based polymers to polycarbonate. The lowest savings are to be found when comparing bio-based polymers to polypropylene.

In 2010, bio-based polyethylene accounted for the largest share of the biopolymers market (28 percent of total production capacity). That was followed by starch blends (16 percent), PLA (15 percent), polyhydroxyalkanoate (12 percent) and bio-based polyesters (8 percent).

One of the fastest-growing biomaterials is wood plastic composite, Carus said. The European market for WPCs has been growing at an average annual rate of 35 percent since 2005, he said. Further WPC growth is expected in every sector in the coming years and will be helped, he added, by rising plastics prices.



## Green Chemicals: Braskem Expects Boost in Bioplastic Demand

Source: ICIS

Posted: June 25, 2012

Growing demand for sustainable products should benefit bio-based polyethylene (PE) and other renewable plastics in the upcoming years, according to Brazil-based bioplastics producer Braskem. Demand for biopolymers is growing by 20%/year, said Rodrigo Belloli, marketing and market intelligence manager for renewable chemicals at Braskem. As demand and interest in bio-based products grow in Latin America, Braskem is targeting the biopolymers sector, which should remain a niche market, Belloli said.



"Innovative solutions with a sustainable profile should catch the consumer's and the market's preference. Aligned with this trend, green PE, which is already a differentiated solution in biopolymers, should benefit from this growing market demand," he said. According to Belloli, biopolymers that have a technical profile that meets current market conditions and that are compatible with existing recycling systems will face fewer challenges. Bioplastics originally were different polymers from those of the traditional market, demanding investments and adjustments in the plastic supply chain. Renewable PE, on the other hand, is a drop-in polymer, which means it does not demand any investment or equipment adjustment from plastic customers.

"Green PE is 100% compatible with the traditional plastic recycling system, being able to be mixed with conventional polyethylenes," he said. Belloli said these characteristics could make PE demand and production stronger. Braskem produces PE via ethanol-based ethylene at its site in Triunfo, Brazil. The company is also considering polypropylene (PP) production via ethanol-based propylene.