

Biodegradable Plastics in Style

Source: ICIS Green Chemicals

Posted: June 7, 2012

It is not just consumer products companies who are jumping into the bioplastics arena but premium brand company Gucci also realized the benefits of bioplastic. The company launched its "Sustainable Soles" edition of women's and men's shoes designed by Frida Giannini as part of Gucci's Prefall 2012 collection. The shoes are made of biodegradable plastics (the company did not indicate what kind of polymers), which it said was certified by UNI EN 13432 and ISO 17088 in Europe.

Sustainable Soles will be available at selected Gucci stores worldwide and on gucci.com from the end of June 2012. These shoes make me drool that's for sure. I wish I could afford a Gucci though. According to Gucci, the men's sneakers (seen above) includes bio-rubber soles and bio-based shoelaces. The Gucci logo used in the shoes are said to be made from recycled polyester label.



This summer, Gucci and its eyewear supplier Safilo, also launched a biodegradable sunglasses made from what they called "Liquid Wood" -- which turns out to be a material composed of wood fiber/lignin and natural wax. The companies also announced that their eyewear will now use 100% recyclable packaging. Customers (wish I could be one) are given informational leaflet and a pre-addressed envelope in order to send the case to a dedicated recycling center, which will make new products out of the materials.

Another Gucci eyewear line called Eyeweb is made with injection-molded bio-based sunglasses composed of castor oil-based polyamides. Arkema is the only company I know right now that is supplying castor-based polyamides for use in sunglasses and eyewear frames. Gucci first launched its sustainable Eyeweb collection last year. According to Gucci's parent company, PPR Group, Gucci was able to replace 34 tonnes of plastic bags consumed last year with cornstarch-based plastic bags. PPR's brands also include (among many others) Yves Saint Laurent, Bottega Veneta, Alexander McQueen, Balenciaga, Stella McCartney, etc.



PPR's Sustainability targets by 2016 includes all collections to be PVC-free by 2016, and to phase out all hazardous chemicals in their brands and production by 2020.

Brand Companies form Bio-PET Collaboration

Source: ICIS Green Chemicals

Posted: June 5, 2012

The bioplastic industry will be glad to hear that well-known branded companies such as Coca-Cola, Ford Motor, Heinz, Nike and Procter & Gamble, have teamed up to accelerate the development and use of 100% plant-based polyethylene terephthalate (PET) plastic materials and fibers in their products. The companies formed this group called "Plant PET Technology Collaborative (PTC)" which will build up upon Coca-Cola's success in its PlantBottle packaging technology.

PTC members said "it is committed to developing commercial solutions for PET plastic made entirely from plants, and will aim to drive the development of common methodologies and standards for the use of plant-based plastic including life cycle analyses and universal terminology." This is a good sign for the bioplastic community especially these days when the global plastics industry in general is facing a downturn because of macroeconomic uncertainty. If demand is weak and pricing for traditional petrochemical-based plastics are going down, plastic converters are not interested to invest in premium bioplastics. For those who are not familiar with PET, this is traditionally manufactured by combining ethylene glycol (EG) with polyethylene terephthalic acid (PTA).

According to ICIS' official chemical economist Paul Hodges on his Chemicals and the Economy blog, US ethylene prices are already 44% down over the past 7 weeks. PTA in China (which is globally the largest producer) is down 23% as buying interest was said to be low because of persistently weak polyester demand and downbeat outlook curtailed buying activity. Added to this weak demand is that China and India's PTA capacity is expected to reach 69m tonnes/year in 2015, a 60% increase from 43m tonnes/year this year, according to ICIS. On its own, 100% plant-based PET will not be able to survive its infancy stage if cheap petroleum-based PTA materials and cheap ethylene from North America will deluge the global market. The backing and commitment of consumer branded companies through this collaboration is an assurance that they are ready to move the bioplastic industry forward even if it means losing margins in the near term.



Purac Supports Biobased Kids House with PLA Roof Insulation

Source: PURAC

Posted: June 4, 2012

On 4 June 2012 a Biobased Kidshouse sponsored by Purac was opened by the Dutch Minister of Economic Affairs, Agriculture and Innovation. The Biobased Kidshouse is an initiative of BE-Basic, an international public-private partnership, funded by the Dutch government in the field of sustainable chemistry and ecology. The biobased kidshouse intends to educate children with respect to biobased materials, in order to promote a biobased economy towards future generations.

The Biobased Kids House is located in the area Education & Innovation, next to the 'My Green World' pavillion at the Floriade in Venlo, The Netherlands, and has been created entirely from innovative, biobased building materials. Every part of the house has been produced from materials based on natural resources and the materials can easily be reused or recycled. Some examples include wall switches and cable ducts made from bioplastics and roof insulation panels made from expanded PLA foam. The project demonstrates how biobased construction can reduce our dependency on fossil fuels.



The official opening of the Biobased Kids House took place on Monday 4th June and was done by the Dutch Minister of Economic Affairs, Agriculture and Innovation Mr. Verhagen. Rop Zoetemeyer, former CTO of Purac, comments: "This project is a good example of educating our children about the opportunities of biobased materials in order to stimulate the next generations to develop a thorough biobased economy"



NatureWorks' Plant-based Biopolymer Ingeo™ Becomes Cradle to Cradle Certified

Source: Bioplastic innovation

Posted: June 2, 2012



Ingeo: ingenious materials from plants not oil

MINNETONKA, Minn.-NatureWorks' Ingeo™ biopolymer, made from plants, not oil, is the **first product of its kind to become Cradle to Cradle Certified^{CM} Silver** by the Cradle to Cradle Products Innovation Institute.

Cradle to Cradle Certified^{CM} is a multi-attribute program that assesses products for safety to human and environmental health, design for future use cycles, and sustainable manufacturing processes. **The program provides guidelines to help businesses implement the Cradle to Cradle® framework**, which focuses on using safe materials that can be disassembled and reused as technical nutrients or composted as biological nutrients.

The certification is recognized by environmental experts worldwide for honoring innovation in sustainability. In the U.S., for example, the Environmental Protection Agency (EPA) includes Cradle to Cradle Certified^{CM} products in its Environmentally Preferable Purchasing (EPP) database for federal agency procurement. These certified products also are eligible for points in the U.S. Green Building Council's (USGBC) LEED certification for green buildings.



"NatureWorks participated in the Cradle to Cradle Certified^{CM} Program process because we believe its holistic view of products is essential to understanding the true totality of sustainability," said Marc Verbruggen, president and CEO, NatureWorks. "We are proud that Ingeo is among the first products in the world to achieve this distinction."

Unlike single-attribute eco-labels, the certification program takes a comprehensive approach to evaluating the design of a product and the practices employed in manufacturing it. Each product is evaluated in five categories: Material Health, Material Reutilization, Renewable Energy Use, Water Stewardship, and Social Responsibility. Products can be Cradle to Cradle Certified^{CM} at one of four levels (Basic, Silver, Gold, or Platinum) based on achievement against criteria in all five categories.

NatureWorks worked closely with consulting firm McDonough Braungart Design Chemistry (MBDC) to collect data throughout the supply chain, assess all materials for impact to human and environmental health, and evaluate manufacturing processes for use of renewable energy, water stewardship, and social responsibility.

Products made from Ingeo span multiple industries and categories, including packaging, electronics, clothing, house wares, health and personal care, semi-durable products, and the foodservice industry.

Uhde Expands into PBS Processing

Source: ICIS Green Chemicals

Posted: May 24, 2012

European engineering company Uhde Inventa-Fischer announced last week that it is now offering to build facilities that can produce at least 40,000 tonnes/year of renewable-based PBS (can be completely or partially bio-based) using Uhde's patented energy-efficient process reactors under the trademark ESPREE and DISCAGE. Uhde's ThyssenKrupp business has also developed a bio-based succinic acid processing technology in collaboration with US-based producer Myriant. The companies confirmed that it is currently building a pilot plant in Leuna, Germany, for producing succinic acid from glucose. The pilot plant is expected to start in the third quarter of 2012.

Uhde Inventa-Fischer



ThyssenKrupp

According to Mitsubishi Chemical, which is one of the very few PBS producers out there, the global market is currently at 5,000-6,000 tonnes/year. This is expected to grow to 50,000 tonnes/year in the next five years, according to Mitsubishi Chemical. Aside from Mitsubishi Chemical, current PBS producers include Showa Denko K.K. (SDK), Samsung Fine Chemical, several Chinese firms such as Kingfa Science & Technology, Zhejiang Hangzhou Xinfu Pharmaceutical Co. Ltd., Hanqing Hexing Chemical Co. Ltd., and China New Materials.

According to this April article from Plastics News, China New Materials is planning to start a 55m lb/year (25,000 tonnes/year) PBS plant in Zibo City, Shandong, but did not mention any time frame. The company is currently producing its own petroleum-based BDO. China New Materials is said to be looking to sell its petroleum-based PBS to US plastic processors. Kingfa Science & Technology just started its new 66m lb/year petroleum-based PBS co-adipate (PBSA) facility in Zhuhai last year in August, and is said to be planning to add 132m lb/year capacity. The green blog's sources indicated that the new capacity could probably be online by October. Plastics News noted that Kingfa's PBSA products are mostly exported to Europe to make shopping bags, trash bags, toys and food-service products. Xinfu Pharmaceutical said it has PBS production capacity of 28.7m lbs/year and sells half of it to Europe. According to Plastics News' article, Xinfu mentioned US PBS sales are less than 220m lbs or 90,000 tonnes — but this might be an error (probably just 22m lbs or 10,000 tonnes) since estimated global PBS production is lower than this figure. (Unless Xinfu is including PBS blends??) Within the biobased PBS activities, SDK has partnered with Myriant this year for the supply of bio-succinic acid for their PBS.

The blog does wonder if there is a plan by SDK to build a new bio-PBS facility given that its competitor Mitsubishi Chemical is now building a 20,000 tonne/year bio-PBS facility in Thailand, which is expected to start in 2014 through its joint venture with PTT Plc called PTT MCC Biochem.