



Bringing bio-based labels to life

We worked with plastics innovator Braskem to create the market's first widely applicable film label made from renewable resources.

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Case study



It's a question often posed by package designers, sustainability managers and label makers alike: Can plastic packaging and labels be made from a renewable resource rather than from fossil fuels? By reaching out to collaborate across our value chain, we showed that the answer is yes.

The story

Brazil-based Braskem is one of the world's leading makers of polyethylene, or PE, the petroleum-based plastic used in packaging for millions of products worldwide. In 2010, Braskem began marketing Green PE, a resin made mostly from sugarcane.

Several companies soon adopted the resin for their packaging; Seventh Generation, a well-known maker of environmentally safe, plant-based household products, employed Green PE in some of its bottles. But no one was using Green PE to make a film label, and thus create a complete bio-based package. We decided to see if it could be done.

« Our industry is heavily based on petroleum, and we see it as our responsibility to help find solutions that use renewable inputs. »

Avery Dennison's Renae Kulis.

« The label’s development would not have been possible without Avery Dennison’s competent and professional responsiveness. »

Martin Clemesha, a technical account manager at Braskem.

From tests to success

We started by connecting Braskem with one of our film suppliers. Then we all worked together to test the possibilities. “It wasn’t as simple as dumping resin into a hopper,” explains Renae Kulis, the global leader of sustainability for the Avery Dennison Materials Group. “It took time to ensure that the resin could be made into label film that performed as well as conventional film. We didn’t want to trade off anything. We dedicated our R&D, sustainability and marketing teams to the label’s development, because we knew it could be a pivotal innovation for our industry.”

After several trials, we and our partners got the result we were looking for: a label film made largely from renewable plant material and that performed identically in printing, die cutting and application as standard PE films. Says Martin Clemesha, a technical account manager at Braskem.



« Our bio-based PE labels are one of the first such options developed for the general market. It’s a development that will benefit everybody - our customers, their customers, even our competitors. If we can start the shift from petroleum to films made from renewable resins, we’ll begin to see a balance of taking from the earth at a rate that allows resources to be replenished. »

Avery Dennison’s Renae Kulis.

A carbon-negative solution

One of the early adopters of our bio-based PE labels was Dutch company EEQO, which markets natural cleaning products across Europe. The sustainability benefits they and other users will gain are significant. Green PE generates a negative carbon footprint across its life cycle. About 46 percent of the energy used in making it comes from renewable sources, and the process for producing it generates energy sold back to the grid. In all, the resin’s net life cycle captures more than two pounds of CO₂ for every pound produced. Green PE is also certified by Bonsucro® as meeting stringent standards for its impact on people and the environment. In huge markets like Europe, Asia and South America, where PE film labels are the label of choice, bio-based PE film stands to have a big impact.

For more information on technical performance and printing recommendations, please refer to the respective datasheets. Please note that the Avery Dennison product range and service offering can be subject to changes. For an accurate overview, please check our website label.averydennison.eu or contact your local Avery Dennison sales representative.

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