



What's the Recipe for Sustainable Packaging?

NOVA Chemicals and Emmerson
Packaging find the perfect ingredients
for Anita's Organic Mill.



Recyclable Plastic Stand-up Bags

Ingredients

- High-performance polyethylene resins
- Innovative multilayer film structure compatible with #2 HDPE recycling streams
- Award-winning packaging manufacturer
- Food company committed to sustainability

Combine all ingredients, adding strong collaboration between each addition. Fold in innovation and sprinkle with technical expertise. Finish with a brand focused on sustainability.

The recipe for commercial success is high-quality ingredients, expert execution and perfect timing. All combined in a collaboration between NOVA Chemicals and Emmerson Packaging to help Anita's Organic Mill, a Canadian manufacturer of organic flour, cereals and mixes, create a fully recyclable, all-polyethylene (PE) stand-up bag.

The story begins in 2016, when NOVA Chemicals introduced a recyclable multilayer PE film structure for use in stand-up pouches to address the growing societal demand for better end-of-life options for packaging. The structure is compatible with #2 HDPE recycling streams and retains the performance, processability, moisture barrier and cost-competitiveness of traditionally used mixed-material structures, which are not recyclable.

"We had been selling SmartPack, our non-laminated PE recyclable pouch, for about 10 years," said Dawn MacDonald, research development manager for Emmerson Packaging. "We saw where other applications in the market were heading, and we knew we needed to start working on

a recyclable, laminated PE/PE bag. Within weeks of an internal conversation about developing a solution, NOVA Chemicals coincidentally contacted us to explore our interest in working on a recyclable pouch. NOVA Chemicals would bring the expertise on resins and film structures, and we would bring the extrusion, conversion and printing know-how."

Emmerson Packaging has been a NOVA Chemicals customer for more than 20 years. Founded in 1956 and headquartered in Amherst, Nova Scotia, Canada, the family-owned company is an industry leader in extruding, converting and printing a broad range of custom-crafted flexible packaging solutions.

All of Anita Organic Mill's nearly 70 retail products are now sold in the recyclable bag, enabling approximately 300,000 bags to be diverted from landfill each year.

Innovation Is in the Bag

In collaboration with Emmerson Packaging, experts at NOVA Chemicals' Centre for Performance Applications built upon the basic recipes for recyclable PE films and pouches to create a film structure for a sample all-PE stand-up pouch.

"The challenge was to design a highly engineered film that had the required physical properties to safely package the product and be processable on Emmerson's conversion equipment without a loss of efficiency or quality," said Rob Clare, applications development specialist for NOVA Chemicals. "Being able to match the performance of a typical non-recyclable solution required careful resin selection and a multilayer film design to enable the right heat- and abuse-resistance from an all-PE solution."

Once the initial film structure was designed, Emmerson Packaging focused on the extrusion process. With insight from NOVA Chemicals' experts, the packaging manufacturer determined the specific run conditions needed to extrude and convert all-PE film on existing equipment.

"Everything went according to plan and a lot quicker and easier than expected," said MacDonald. "I give a lot of credit to NOVA Chemicals for its experienced-based recommendations and our team for making the film and pouch so artfully and skillfully."



Acting on a Commitment

In September 2017, one of Emmerson Packaging's early all-PE pouches that was used for a commercial food product made its way into the freezer of Jayda Smith, vice president of sales and marketing for Anita's Organic Mill in Chilliwack, British Columbia, Canada.

"Anita's had been using non-recyclable paper bags lined with plastic, which didn't align with our commitment of making products that are good for both people and the planet," said Smith. "We were looking for a more sustainable option that would provide food safety and moisture barrier but wouldn't end up in landfill. When I came across the #2 bag in my freezer, I contacted the food company to ask who had made it. That's when I reached out to Emmerson Packaging."

"We were looking for a more sustainable option that would provide food safety, a moisture barrier, as well as be recyclable."

Jayda Smith, vice president of sales and marketing, Anita's Organic Mill

The packaging manufacturer was ready. Its ongoing collaboration with NOVA Chemicals and experience with some initial customers helped shorten the development timeframe needed to meet Anita's specific packaging needs. The recyclable pouches, which are also printed by Emmerson Packaging, were on the shelf within a year. "We had internal expertise on film structures by the time



Anita's contacted us, but we still leaned on NOVA Chemicals for insight on resins, structures and testing," said MacDonald. "The company's employees were extremely responsive whenever we needed guidance, such as when we had to make modifications so the bags could withstand being dropped from shelf or counter height."

The six-layer film structure used for Anita's resealable packaging consists of two films laminated together – a three-layer external film and a three-layer internal sealant film made from NOVA Chemicals' high-performance PE resins.

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"Anita's was first in the baking aisle to offer this type of packaging in Canada, so it was very important to us on many levels," said Smith. "Collaborating with two other Canadian companies was the icing on the cake."

“The work with Anita's added to our cumulative knowledge about recyclable PE packaging, allowing us to move into the pet food and other industries. The end point of one project becomes the beginning point of the next, more complicated recyclable packaging development”



Dawn MacDonald
Research development manager,
Emmerson Packaging



At Anita's, we care about the environment which is why we're using the first 100% recyclable plastic bag in the baking aisle.

Chez Anita's, nous nous soucions de l'environnement. C'est pourquoi nous utilisons le premier sac en plastique recyclable à 100 % au rayon boulangerie.



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