

# PACKAGING

SERVING CANADA'S PACKAGING COMMUNITY SINCE 1947



## BEEF UP THE VOLUME!

Cutting-edge product innovation and inspired packaging execution driving venerable frozen meat producer on to greater marketplace glories

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# PACKAGING MATERIALS INNOVATION

MAKES TRANSPARENT DAIRY AND DESSERT PACKAGING AFFORDABLE AND PRACTICAL

Transparent packaging is one of the hottest trends in retail sales today. With the drive toward wholesome foods, showcasing appealing products through crystal clear packaging is a natural next step in marketing.

Mintel, a leading industry research firm in its recent Food Packaging Trends report found that more than half of shoppers agree it's important to see a product through its packaging." Mintel Consumer Trends Analyst Stacy Glasgow says, "As sales results from products that have switched to see-through packaging suggest, consumers feel more confident seeing clear, on-shelf evidence that a product not only appears as it should, but that it looks appetizing as well."

The trend toward transparent packaging is just as strong in the dairy and dessert industry as in other retail segments. *Dairy Foods* magazine Managing Editor Sarah Kenney reported in the June 2015 issue of the magazine, "Dessert processors are taking a cue from gelato and dessert shops and releasing clear packaging that shows off every swirl, chunk, and color in their products. Even one new cottage cheese product sports an innovative see-through container."

If transparent packaging is such a potent trend, why haven't more of the dairy and dessert companies who use highly efficient "form, fill, and seal" (FFS) packaging processes made the switch? The most commonly applied material in the form-fill-seal process today is opaque or semi-transparent, high impact polystyrene (HIPS). While a modifier such as styrene block copolymer can be used to increase transparency, this adds packaging cost. And, while producers have worked to modify well known transparent materials such as PET and clarified PP to satisfy the stringent performance demands of the FFS process and package, the resulting modified resins have not so far, maintained the transparency for which these plastics are normally known.

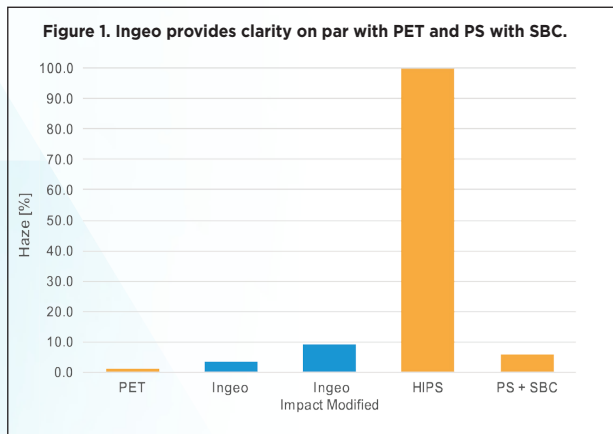
## SOLVING THE COST AND PERFORMANCE ISSUE FOR TRANSPARENCY

First introduced commercially to the plastics and packaging markets by producer NatureWorks in 2003, Ingeo gained immediate interest as a new-to-the-world material offering a distinct set of functional material properties, while sourced from renewable materials. Today, there is a mature, thriving Ingeo ecosystem made up of compounders and blends suppliers, equipment manufacturers, distributors, researchers, and consumer and industrial companies applying this naturally advanced plastic in unique and cost effective ways. In the last decade, NatureWorks has shipped more than 1.3 billion pounds of Ingeo, and worked closely with the packaging industry to understand the packaging fit for its functional materials. What's become clear is that in FFS packaging, Ingeo provides a competitively priced, improved performance, and transparent biobased alternative to FFS incumbent styrenic plastics like HIPS.



## EXAMINING IN GEO AS AN ALTERNATIVE TO HIPS

The Ingeo grades optimized for dairy and dessert packaging include both conventional and high impact options. Both offer a crystal-clear transparency rivaling unmodified PET. Figure 1 shows the wide gap in transparency between Ingeo and HIPS. PS modified with styrene block copolymer ("SBC") additive is comparable in terms of clarity, but brings cost and performance ramifications.

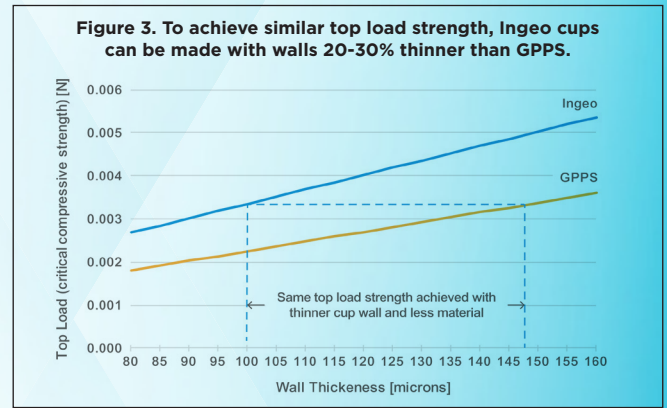
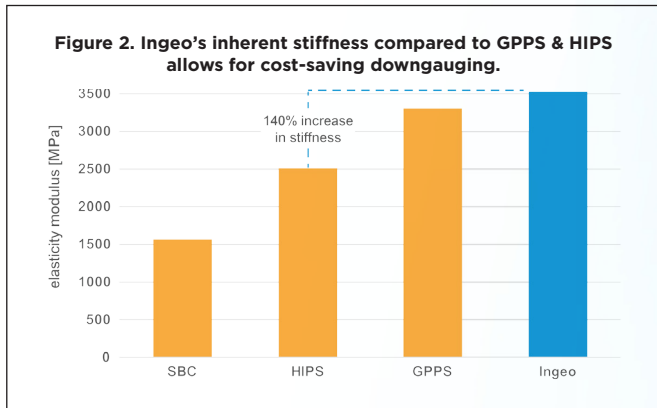


## COST IS ON EVERYONE'S MIND IN PACKAGING

One of the facts that most surprise packaging specifiers considering Ingeo for a material substitution is that the cost of Ingeo is competitive with HIPS. The perception is that a relatively new plastic must be more expensive. With over a billion pounds sold and an efficient, maturing sales channel in place, the economies of scale make this innovative plastic a candidate for substitution where it exceeds incumbents in terms of performance. In addition, because Ingeo is renewably sourced, it is not subject to the wide price swings of the global petroleum market and offers significantly lower price volatility than fossil derived plastics. Companies can hedge their purchases over a prolonged time period and lock in favorable pricing.



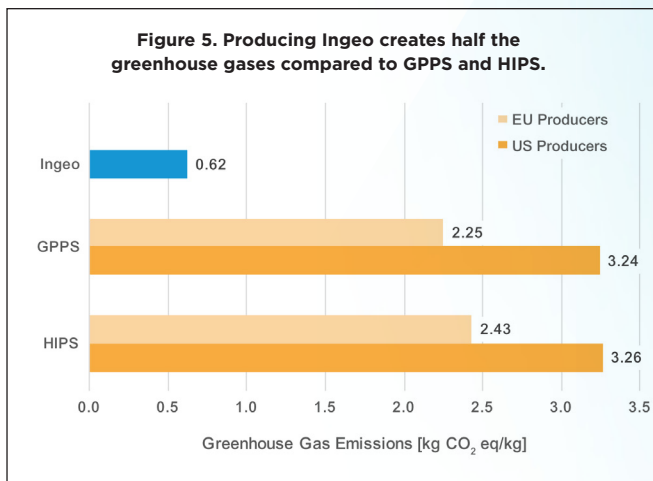
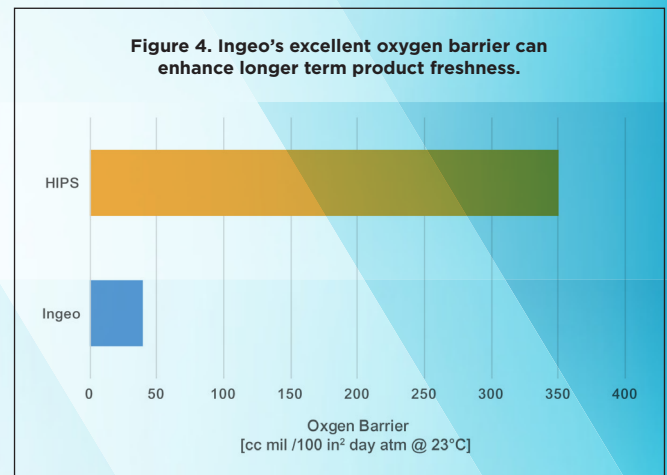
France-based Synerlink, a worldwide leader in integrated packaging equipment with its Arcil brand form-fill-seal lines, has thoroughly assessed the performance of Ingeo on its equipment. Ingeo is an inherently stiff plastic, with stiffness 140 percent that of HIPS. This translates directly into package light weighting and cost savings compared to HIPS, GPPS, SBC, PET (Figure 2). Calculations on this high stiffness indicate that approximately 20 to 30 percent less wall thickness is needed for Ingeo compared to HIPS at equivalent top load strength (Figure 3). For the consumer, the stiffness of Ingeo also inherently makes for excellent snap-apart characteristics in multipack cups.



According to Clear Lam Packaging, a developer and manufacturer of innovative flexible and rigid packaging materials used for foods, Ingeo sheet has ideal performance for form-fill-seal applications – the most cost effective packaging for single serve and multipack cups.

### KEEPING PRODUCTS FRESH AND APPEALING

Extensive testing of the flavor and aroma barrier properties of Ingeo showed that permeation was too low to measure for two common aroma and flavor tests in the packaging industry – the pineapple odor of ethyl butyrate and the citrus odor of d-limonene. And, as Figure 4 indicates, Ingeo packaging has a superior oxygen barrier as compared to HIPS for longer term freshness.



### CARBON FOOTPRINT LOWER THAN FOSSIL CARBON PLASTICS

Replacing a plastic made with fossil carbon with a biobased functional material provides another compelling reason to make the substitution in the dairy and dessert industry. Many consumers today prefer less processed and more natural products and packaging. Furthermore, the energy consumed and the greenhouse gases emitted while manufacturing Ingeo are lower than petroleum-based plastics as Figure 5 shows.

In terms of the ability to utilize packaging to improve sales, materials science in the form of a relatively new plastic, Ingeo, has come to the aid of marketers at the correct time, cost, performance, and carbon footprint.

[www.natureworkslc.com](http://www.natureworkslc.com)