

CASE STUDY

Packaging Makeover:

Delivering Recyclability Without Sacrificing Performance, Quality or Style



BACKGROUND

A leading producer of premium dog and cat foods sought to improve the recyclability of their packaging. Their product range includes specialized nutritional formulas requiring packaging with strict performance demands, including barrier protection, high-quality graphics, and overall integrity.

The existing structure used a multilayer design with high-barrier oriented PET laminated to a coextruded sealant film. The brand challenged their packaging suppliers to **create a cost-neutral, fully recyclable alternative** that maintained all current functional and aesthetic attributes.



CHALLENGES



Create Superior Barrier to Preserve Critical Sensory Quality

The new packaging structure needed to deliver exceptional protection against moisture, oxygen, and grease to safeguard the sensory properties of pet foods. Even minor flavor or aroma changes can significantly impact acceptance by dogs and cats, making high-barrier performance essential.



Ensure Recyclability while Maintaining Performance

To meet recyclability goals, the package had to be compatible with existing recycling streams. This required eliminating polyester, nylon, and limiting EVOH content—demanding a complete departure from traditional multilayer barrier constructions.



Maintain or Reduce Cost

Any new solution had to deliver improved recyclability and equivalent performance while remaining cost-neutral, adding another layer of complexity to the redesign challenge.



SOLUTION

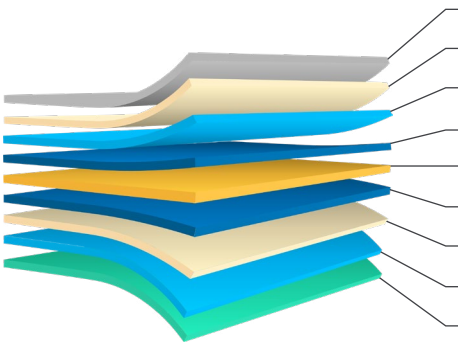
Meeting the performance, recyclability, and cost challenges required the development of two films: a high-gloss, dimensionally stable print film and a new high-barrier sealant film.

- **SURPASS® HPx267-AB resin** was incorporated into the sealant film to deliver exceptional moisture and grease barrier performance.
- **SURPASS® HPs167-AB and HPs153-A** were used in the MDO print film to provide dimensional stability (stiffness), optical clarity, machine-direction orientability, and to contribute additional barrier properties.

To complete the structure, HDPE was used in the outer layer to provide heat resistance, EVOH provided the oxygen barrier, and an octene-based plastomer sealant ensured strong seals — all while maintaining full recyclability and meeting cost targets.



Complex structure and use of HPx267-AB in sealant films:



Layer %	Material	Purpose
15%	19C	Stiffness and heat resistance
10%	HPx267-AB	Moisture and grease barrier
12.5%	70% HPx267-AB, 30% FP120	Moisture barrier, tear and flex crack resistance
5%	PF-0118 + tie concentrate	Adhesion
10%	EVOH	Oxygen barrier
5%	PF-0118 + tie concentrate	Adhesion
10%	HPx267-AB	Moisture and grease barrier
12.5%	70% HPx267-AB, 30% FP120	Grease barrier and tear and flex crack resistance
20%	QPsK905-A	Enhanced sealant

BONFIRE®, our film modeling software, can show you what is possible in a matter of minutes.



Improvements made while using HPx267:

Excellent Moisture Barrier



0.045 g/100 in²-day
100% relative humidity level

Monomaterial



Meets APR design guide for
recyclable structures

Lower Cost



Reduce film material costs by 10%

Equivalent performance for grease penetration, surface gloss and opacity maintaining package aesthetics.

SUMMARY

SURPASS® HPx267-AB resin enabled film manufacturers, converters, and brand teams to develop recyclable pet food packaging that maintained critical barrier, shelf-life, performance, and aesthetic requirements. SURPASS HPx267-AB resin was essential in delivering high moisture and grease barrier within the coextruded sealant film, while HPs167-AB was essential in ensuring dimensional stability and excellent optical clarity in the MDO print film.

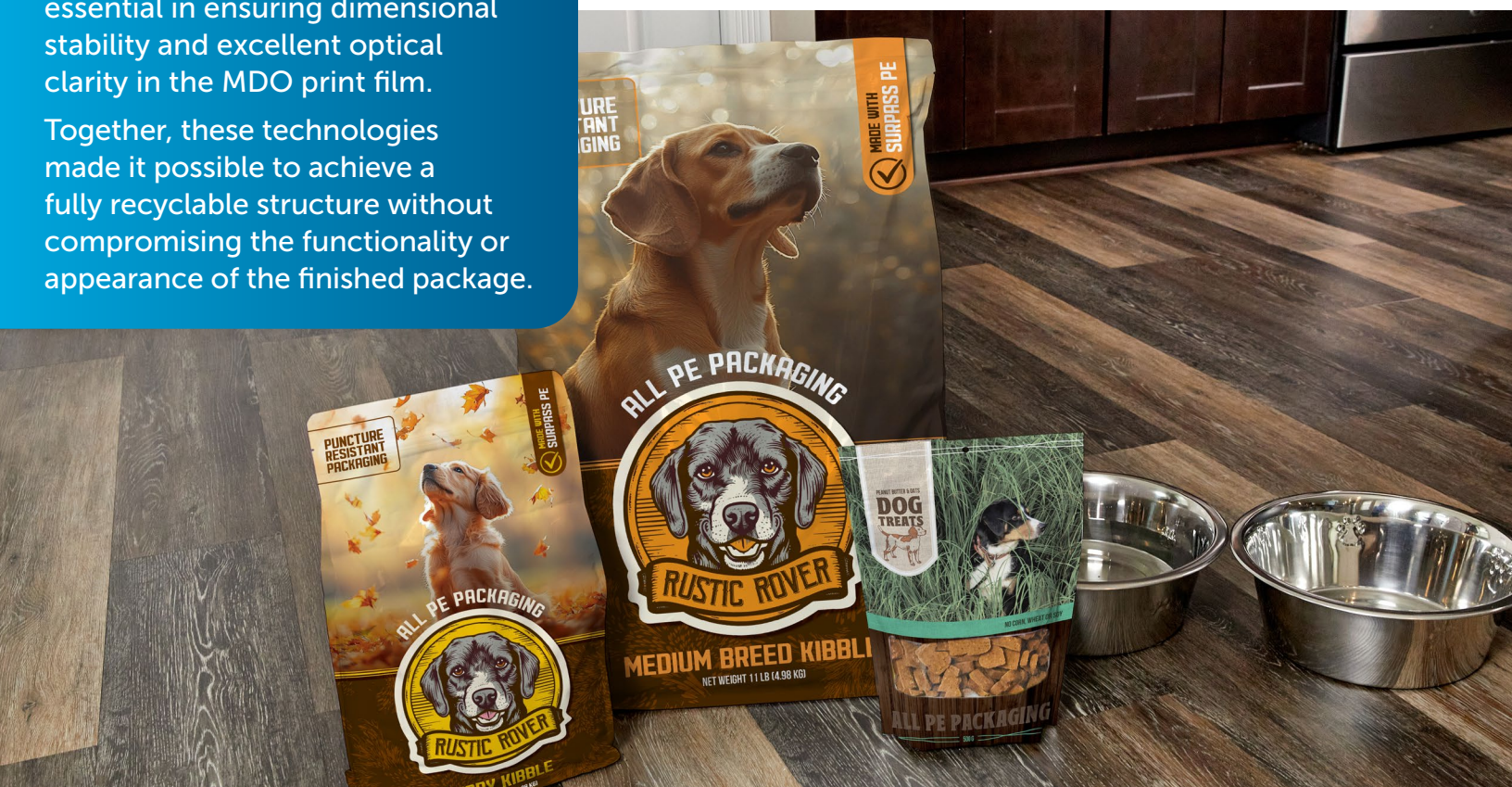
Together, these technologies made it possible to achieve a fully recyclable structure without compromising the functionality or appearance of the finished package.



Redesigning high-performance laminations for recyclability is one of the toughest challenges we face. The high-barrier performance, dimensional stability, and integrity once delivered by coated biaxially oriented print films now have to come from recyclable polyethylene structures. SURPASS® HPx267-AB resin has been a true game-changer—enabling us to maintain critical performance and cost targets while significantly improving recyclability.

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