



Info Sheet
Flexible Films

SURPASS® FPs016-C LLDPE Resin

The Versatile Performer

SURPASS FPs016-C linear low density polyethylene (LLDPE) resin is a versatile performer in a wide range of applications. It offers an ideal combination of toughness, high seal strength and improved optics (in blends). Best-in-class melt strength provides bubble stability, resulting in ease of processing - advantageous for today's high-performance co-extruded films.

When SURPASS FPs016-C resin is used in multilayer thermoforming film structures, it offers many unique attributes such as a broad temperature forming window with minimal corner thinning. Benefits include excellent puncture, tear, and melt strength that help maintain package integrity.

Applications

- Food packaging
 - Meat, cheese, and poultry
 - Frozen food and ice bags
- Heavy duty sacks
- Tie layer concentrates/blends
- High-strength films
 - Used in institutional meat co-extruded structures to maintain stiffness and toughness (used in combination with SURPASS HPs167-AB resin)
- Thermoformed co-extruded structures
 - Potential replacement of more expensive materials



Key Attributes

- Excellent film toughness, including dart impact, puncture resistance, and tear resistance
- Outstanding seal and hot tack performance
- High interfacial clarity
- Low hexane extractables
- Uniform shrink characteristics
- High melt strength

Benefits

- Cost advantage - reduce the amount of nylon compared to conventional co-extruded structures
- Excellent burn-through resistance in lap seal structures
- Improved bubble stability at high throughput rates
- Good thermoformability
 - consistent draw and forming
 - prevents corner thinning and blowouts
- Resists side wall failures



SPOTLIGHT: Corner Thinning in Thermoformed Structures

Many LLDPEs do not draw uniformly in thermoformed films, exhibiting erratic or excessive gauge reduction, especially in the package corners. This thinning reduces barrier protection and creates weak spots that may lead to package integrity failures. SURPASS FPs016-C resin has a unique architecture that enables it to draw uniformly with minimal corner thinning. In addition, the resin's excellent puncture, tear and impact resistance ensures that packages remain hermetic throughout the entire distribution cycle.

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SURPASS FPs016-C resin exhibits exceptional machine direction tear strength along with excellent bubble stability. In monolayer films, this resin shows improved MD & TD tear strength in comparison to conventional Z-N resins (Figure 1).

This attribute is especially useful in applications like heavy duty sacks to reduce side wall tears, and snack food packaging where thin-gauge side splits are common.

SURPASS FPs016-C resin also exhibits exceptional ASTM slow puncture. In monolayer films, this resin shows improved slow puncture in comparison to competitive mLLDPE and conventional Z-N C6 & C4-LLDPE resins (Figure 2).

This slow puncture property is especially important to prevent leaks when it comes to packaging bone-in meats. SURPASS FPs016-C resin's enhanced flex-crack resistance prevents further compromises to the barrier layer in high-performance co-extruded films.

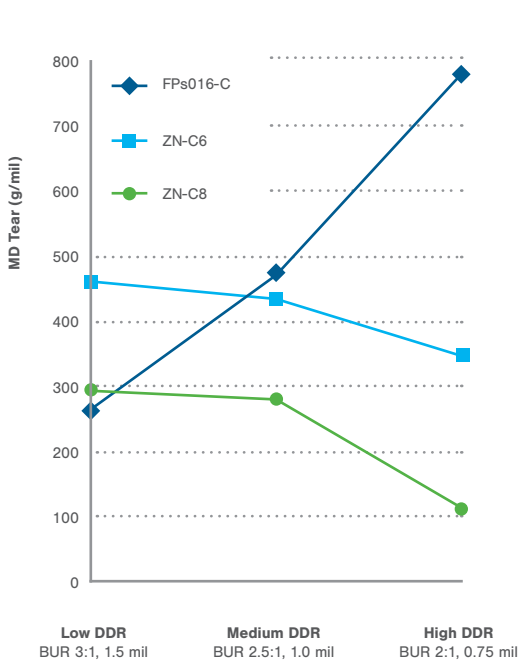


Figure 1: SURPASS FPs016-C resin has unusual enhancements in MD tear as the film thickness is reduced from 1.5 to 0.75 mil. This allows for down-gauging of film while still enhancing MD tear and retaining TD tear properties.

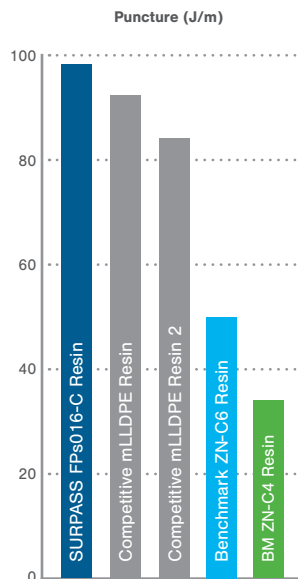


Figure 2: SURPASS FPs016-C resin shows excellent slow puncture compared to competitive mLLDPE and conventional C6 and C4-LLDPE films.



A variety of applications can benefit from SURPASS FPs016-C resin:

- Fresh red meat & cooked/cured meats
 - Nylon/FPs016 in tie/EVOH/ FPs016-C in tie/sealant
- Frozen food
 - FPs016-C/PE+pigment/ FPs016-C
- Microwavable frozen bag
 - OPP/ink/Adh/FPs016-C
- Liquid packaging
 - o-Nylon/ink/Adh/FPs016-C
- Dry food packaging
 - HDPE/sHDPE/FPs016-C in tie/ Nylon/FPs016-C in tie/sealant
- Heavy duty sack
 - FPs016-C + LDPE/MDPE + HDPE/FPs016-C + LDPE