Surlyn® Properties and Performance Overview

Key features:
Hot tack | Seal temperature | Formability | Clarity | Seal through contamination | Oil/grease resistance

What are Surlyn® resins?

Surlyn® packaging resins are made from ethylene acid copolymers, in which the acid groups are partially neutralized with either zinc or sodium ions. The acid in the polymer gives polarity and reduces crystallinity. The ionic bonding between the polymer chains gives outstanding melt strength, toughness, and clarity.

The combination of properties available in Surlyn® resins is unique among polymers, and especially well suited to packaging applications. The resins are available for use in conventional extrusion/coextrusion blown film, cast film, and extrusion coating equipment designed to process polyethylene resins.

Benefits in Packaging Applications

The combination of outstanding properties of Surlyn® make it the cost-effective choice in a wide variety of packaging applications, including:

- Meat, seafood, poultry, and cheese packaging — the outstanding heat seal, hot tack, and seal through contamination properties of Surlyn® can dramatically reduce leakers both off-machine and in-store.
- Snack packaging — the low-temperature sealing and outstanding hot tack of Surlyn® allow rates on high-speed equipment to increase by as much as 300%.
- Skin packaging/stretch pak — the clarity, drawability, and toughness of Surlyn® make it a perfect choice for retail carded display packaging.
- Personal and health care packaging — outstanding sealing properties, toughness, and abrasion resistance allow packaging made with Surlyn® to give reliable, leak-free seals that ensure package integrity.
- Liquid packaging — seal through contamination and oil resistance give liquid packages made with Surlyn® a dramatic reduction in leakers.

Property Advantages of Surlyn®

<p>| Hot tack — the highest hot tack strength and broadest hot tack range of any sealant |</p>
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<th>Packing Benefits</th>
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<td>• higher packaging line speeds</td>
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<td>• reduced seal failures and leakers</td>
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| Sealing performance — low sealing temperatures and the widest sealing temperature range available |
| • faster sealing with less dwell time |
| • higher packaging line speeds |
| • tolerates temperature variations in real-world |

For more information, e-mail us at: packaging@dupont.com
Surlyn® Quality and Performance

Converters and end users are asking more from their packaging resins than ever before. Higher quality standards, downgauging pressures, and more demanding applications continuously challenge the performance of packaging resins: Surlyn® meets the challenge. With its outstanding combination of properties and production at DuPont ISO 9002-qualified manufacturing facilities, Surlyn® has the performance and quality needed in today's tough packaging environment.

Also, when you buy Surlyn®, you're supported by DuPont's sales assistance and technical service teams, unparalleled in the industry for knowledge and experience in the packaging area. We'll work with you before and after the sale to be sure the grade you buy is the best to suit your needs.

FDA Status

Surlyn® packaging resins are available that comply with U.S. FDA Regulations for use in food contact equipment.

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**Formability** — excellent formability/deep draw for evenly distributed film that resists pinholing

- fewer leakers due to cracks/pinholes in thin film areas

**Clarity** — crystal clear film

- gives packages a high-gloss, "premium" image

**Seal through contamination** — highly effective at sealing through all types of contamination

- fewer failures at the packaging machine
- reduced in-store leakers

**Oil/grease resistance** — excellent barrier for oily or greasy products

- fewer failures at the packaging machine
- reduced in-store leakers
applications. For more information, contact your DuPont sales office or e-mail us at: packaging@dupont.com.

*EQUIPMENT NOTE: Materials of construction used in the processing of Surlyn® resins should be corrosion-resistant. Stainless steels and duplex chrome or nickel are recommended for surfaces in contact with the molten resins.

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