

CASE STUDY

POST-CONSUMER RECYCLED POLYETHYLENE CIRCULAR SOLUTION FOR COLLATION SHRINK FILM



THE BACKGROUND

Shrink wrap, inclusive of collation packaging, is used extensively in the consumer and industrial segments. Collation shrink packaging is a versatile application that fulfills brand owners' requirements to effectively bundle multiple products, and allow for branding opportunities to enhance shelf appeal. Collation shrink film often reduces the need for excessive packaging, making it an attractive choice for brand owners opting for sustainable packaging solutions.

With growing concerns on the potential environmental impact of packaging, there is increased demand to design sustainable solutions for collation shrink, without compromising on packaging quality and integrity. One of the key areas of focus from the packaging value chain is to look at incorporating recycled content in their solutions.

CHALLENGE

The primary function of collation shrink is to bundle and secure multiple items, for safe handling and transportation. To address this requirement, mechanical properties such as toughness and puncture resistance are critical to ensuring the packaging integrity is maintained throughout its service life.

Incorporating post-consumer recycled (PCR) polyethylene in collation shrink film solutions can be challenging, as the quality and consistency of the recycled material will affect the desired quality and consistency. Mechanical properties and gel attributes are key attributes that determine the effectiveness of the collation shrink during film and shrink processing and service life.

The solution with recycled material must also meet the required standards for gloss, clarity and colour to enhance shelf appeal and maximise branding.

THE SOLUTION

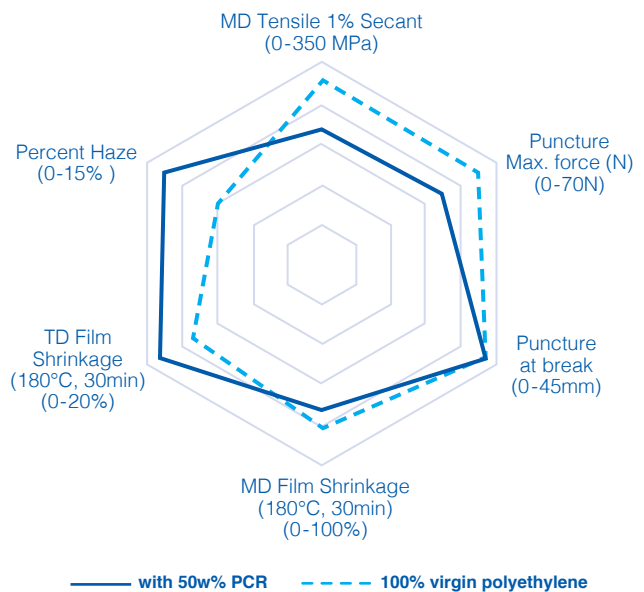
Corys Packaging LLC is one of the leading flexible packaging companies in the United Arab Emirates. In recent years, Corys Packaging has seen increasing demand for sustainable collation shrink film solutions from their local and global brand customers. The company sought to develop a solution to incorporate recycled polyolefins that can meet the packaging requirements and sustainability needs for customers.

Corys Packaging worked with Borouge to leverage the company's comprehensive and high-quality mechanically recycled polyolefin portfolio. A circular collation shrink solution that incorporates 50% post-consumer recycled polyethylene was developed for Corys Packaging. The result presented good toughness and puncture resistance, and also achieved optimal gloss.



The combined formulation delivers excellent processability and shrinkage, and optimal toughness with high holding strength. The successful application is made possible through the close collaboration between Borouge and Corys Packaging alongside their esteemed value chain partners, and paves the way for more sustainable packaging applications.

PERFORMANCE



SUMMARY

Application/Product	Collation shrink film with 50% recycled polyethylene
Process	Blown film extrusion
Grade used	Post-consumer recycled polyethylene
Functional requirements	<ul style="list-style-type: none"> Good toughness performance Good puncture resistance Optimal gloss Good machinability during packaging at shrink tunnel
Benefits	<ul style="list-style-type: none"> Excellent processability and shrinkage Optimal toughness with high holding strength Acceptable optical performance Circular solution to meet sustainability targets

About Borouge Plc Borouge Plc, listed on the Abu Dhabi Securities Exchange (ADX symbol: BOROUGE / ISIN AEE01072B225), is a leading global polyolefins company that provides innovative and differentiated polyolefin solutions for the infrastructure, energy, mobility, healthcare, agriculture and advanced packaging industries. Borouge employs more than 3,100 people and serves customers in over 86 countries across Asia, the Middle East and Africa. Founded in 1998 through a strategic partnership between ADNOC and Borealis, Borouge was formed to build and operate a polyolefins complex in Al Ruwais Industrial City, United Arab Emirates, which today is one of the world's largest integrated polyolefin complexes. ADNOC owns a majority 54% stake and Borealis holds a 36% stake in Borouge.

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