



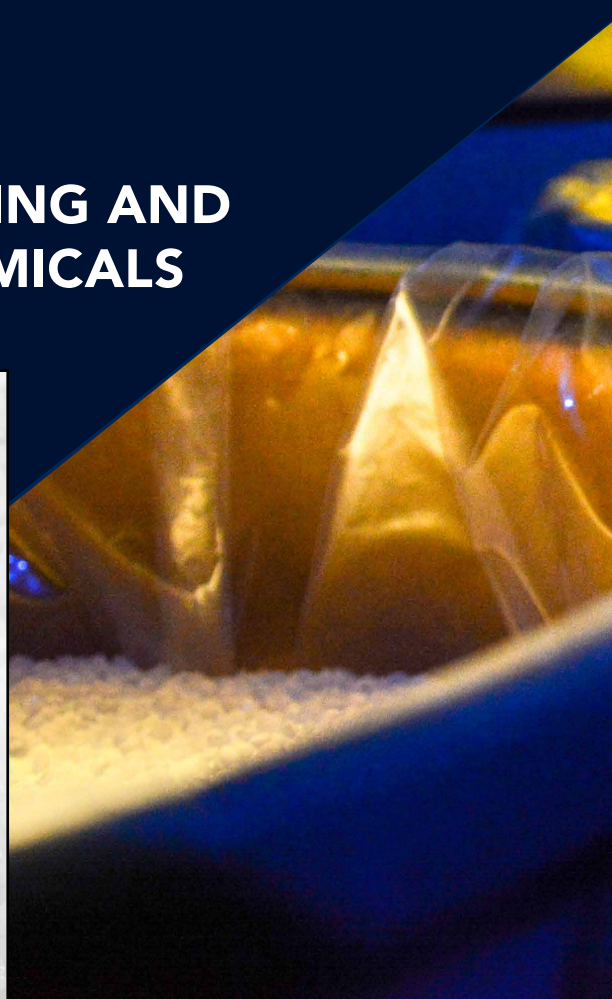
# Resin Solutions

FROM SILO TO  
SHELF...

CHALLENGES IN  
BULK HANDLING AND  
STORAGE OF RESIN  
AND CHEMICALS



# CHALLENGES IN BULK HANDLING AND STORAGE OF RESIN AND CHEMICALS



## *PROTECTING PRODUCT INTEGRITY*

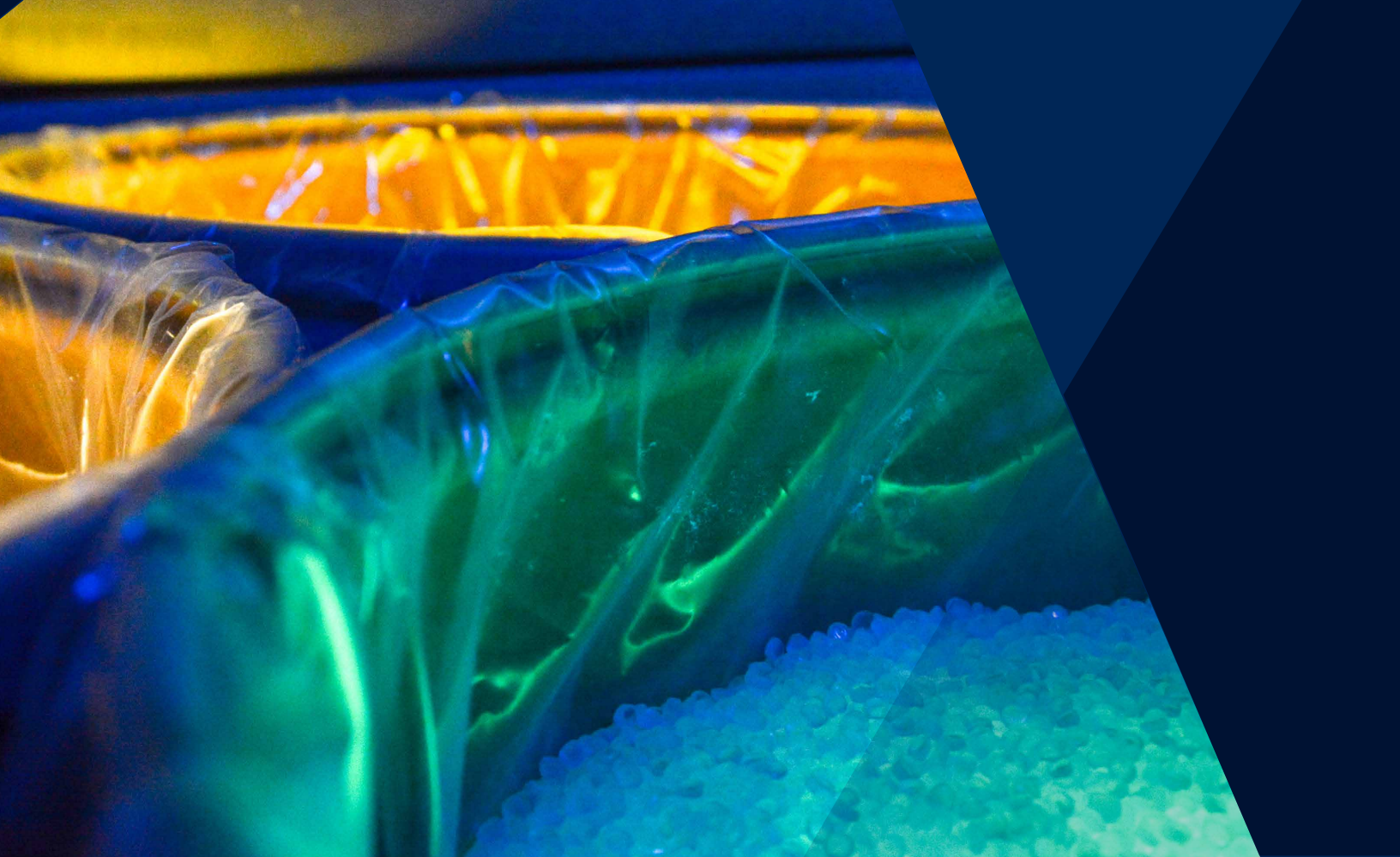
The end uses of plastic resins are carefully engineered products that touch almost every phase of our daily lives. The designs of these products are based on the specific properties of the plastic resins. If these properties are altered through the handling process, the performance of the end use products may suffer.

### *AREAS OF CONCERN IN HANDLING AND STORAGE:*

- Foreign contamination, such as dirt particles, that can pose processing challenges, damaged equipment or rejected product
- Contamination of one plastic resin with another of different properties which can weaken performance of the end use product
- Product degradation caused from UV light, oxygen or moisture that can cause failures in end products

Intermediate Bulk Packaging plays an important role in ensuring that resin and chemicals are transported and processed without contamination. Bulk liners can provide barriers to moisture, oxygen and UV that can degrade the performance of resin and chemicals.





## MAXIMIZING SHIPPING EFFICIENCIES

Several factors such as driver shortages and regulations have led to rising prices across the transportation industry in recent times. Freight rates are soaring thanks to the robust economy and the recent start of enforcement of the electronic logging device mandate, a federal rule that requires truckers to digitally log their driving time. As the costs of shipping continue to rise, selecting the most economical configuration for maximizing shipping is becoming more important than ever.

Form-Fit liners maximize freight loading and improve safety by providing a stable, stackable package. Form-fit liners also improve the appearance of your product by providing a consistently square and uniform package that maximizes space. Liners also allow bulk bags, drums and gaylord boxes to be reused.

## STREAMLINING OPERATIONS FOR CUSTOMERS

Bulk handling efficiency is crucial to increasing yields and reducing waste. Bulk storage and automatic conveying of raw materials in your customer's plant reduces labor requirements and improves overall operating efficiency. Customers are seeking dry bulk material process flow advantage by improving material introduction efficiency, ensuring accurate downstream material supply, and protecting operator interactions with material and discharging or unloading equipment.

FIBCs with form-fit liners are designed to meet your customers specific operations. Customized liner designs allow you to easily adapt and optimize to the filling and dispensing process. They fill and dispense more completely because there are no folds or pleats to trap material.

Form fit liners provide fill and discharge spouts that can be easily sealed to further protect against product contamination and leakage during handling.

## DRY LINERS FOR FIBCS

Flexible Intermediate Bulk Containers (FIBC) are designed to carry material that is 1000 times of its own weight. Its usage can reduce freight costs, warehousing costs and your handling costs.

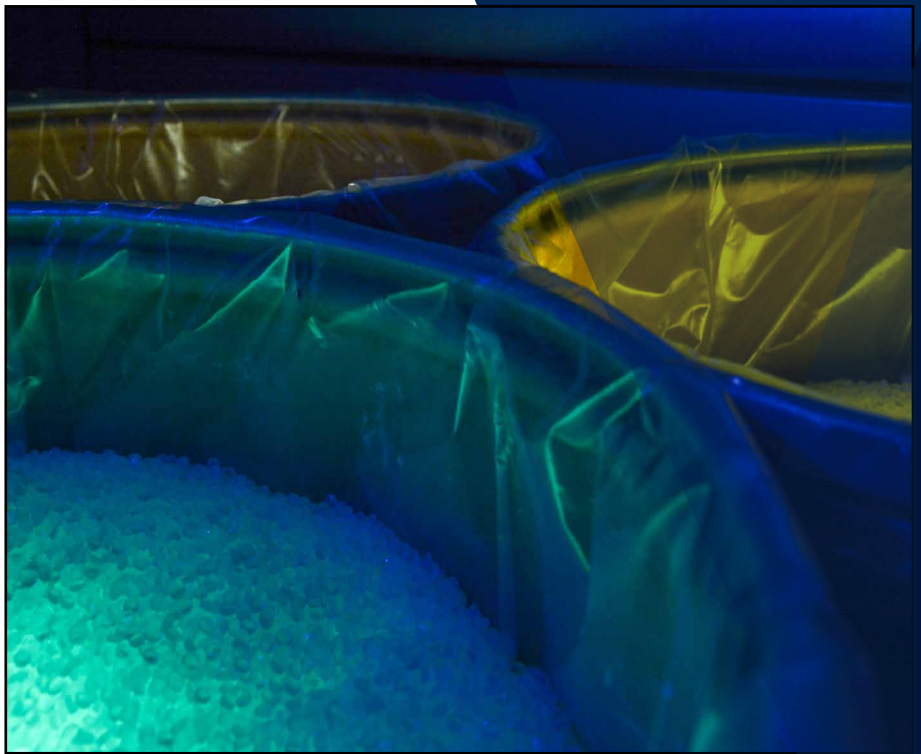
Grayling™ Form-Fit liners are custom designed to fit the dimensions of the FIBC providing maximum filling and dispensing efficiency through complete discharging of product. Unlike a basic "tube liner", Form-Fit Liners offer a flat top and bottom and incorporate a spout diameter and length to best compliment the FIBC'S fill and discharge spouts.

Our form-fit liners are produced with high quality seals that provide less risk of splitting and product loss. Liners are produced in a variety of materials from polyethylene for non-hygroscopic resins to coextruded materials with enhanced moisture barrier for more hygroscopic resins.

We can produce bag-on-roll liners up to 48" on our fully automated equipment that provides your customers with ease of use.







## LINERS FOR GAYLORDS AND DRUMS

Polyethylene liners for Gaylords and drums provide protection from product contamination that can occur from box or drum reuse.

Single use liners enable drum reuse and eliminate the costs and effort required for cleaning while preventing cross contamination risks.

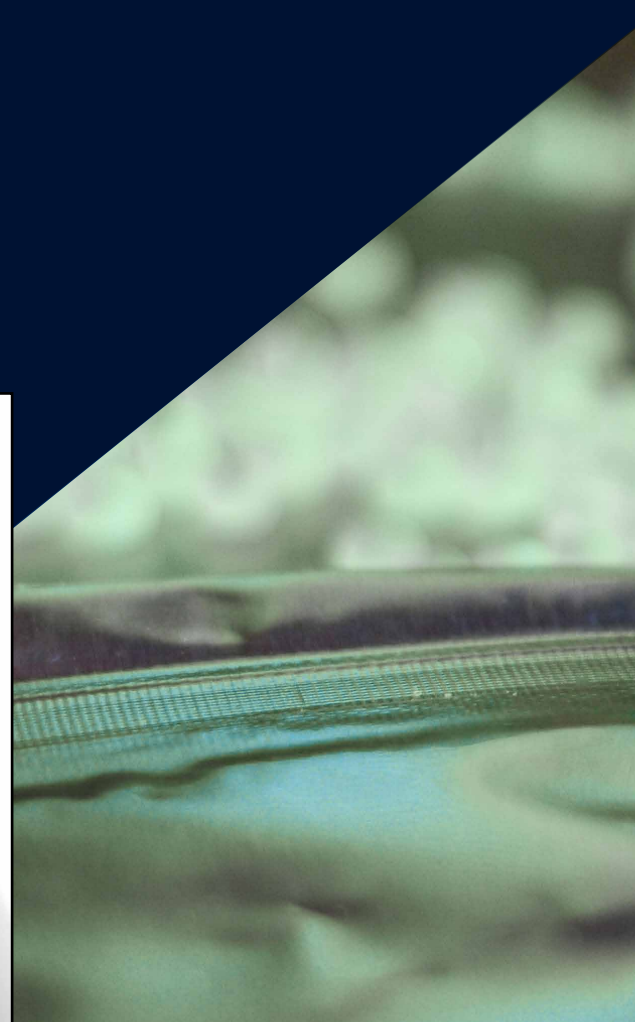
Grayling™ drum liners are an economical alternative to drum cleaning. These heavy-duty liners come individual or on a roll separated by perforations. The liners feature an open top and a flat sealed bottom and are available in 3mil, 4mil and 8mil gauges. We offer a portfolio of stock liners as well as custom.

### ***SPECIFICATIONS:***

Round bottom drum liners come in stock with a diameter of 16", 20" or 23" to fit 55 gallon containers.



## FOIL LINERS



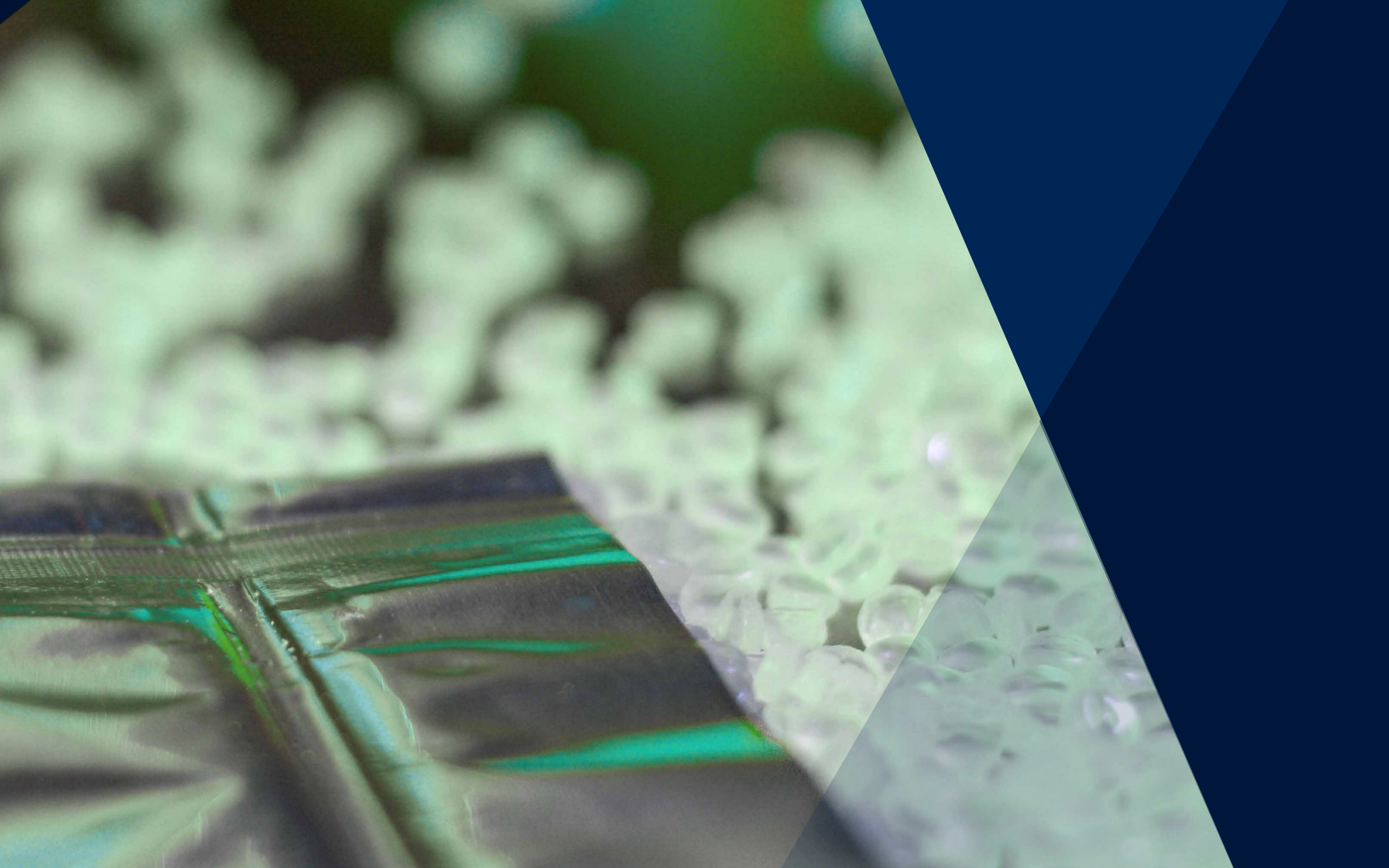
Grayling™ Form-Fit Foil liners for hygroscopic dry bulk materials in FIBCs, IBCs and corrugated boxes improve package performance and protect resin and chemicals from moisture, contamination and leakage during processing, storage and transportation.

Constructed from Aluminum foil laminations, form-fit foil liners offer an impermeable barrier providing the highest level of ideal protection from Oxygen, moisture and UV to protect sensitive resins like Nylon and EVOH.

### ***SPECIFICATIONS:***

Foil form fit liners are available in foot print sizes from 38" square up to 47" square and in rectangular footprints of 38" X 33" to 47" X 45". We can also produce foil liners for octobins. The height of the liner can generally be up to 94" tall.

Fill and dispense spouts are available in diameters from 8" up to 24" and in lengths up to 33".



## QUICK REFERENCE:

### COMMODITY RESINS

Less expensive and easy to process plastics

(PPE, LDPE, HDPE)

### **BULK HANDLING & STORAGE SOLUTIONS:**

Non-Hygroscopic

Polyethylene liners for Gaylords, Octobins and drums

### ENGINEERED RESINS

Unique mechanical and/or thermal properties designed for specific applications

(ABS, Polycarbonate, Nylon, TPE, EVOH)

Hygroscopic - Moisture sensitivity

Form-Fit liners made from Polyethylene or coextruded materials with higher moisture barrier

Foil Lamination form-fit liners for Boxes, FIBs and drums provide highest levels of oxygen, moisture and UV barrier





## BEYOND BOUNDARIES™

Innovators at our core, we develop engineered solutions for our customers' complex problems. Recognized globally for our flexible containment solutions, ILC Dover serves customers in a diverse range of industries, including pharmaceutical and biopharmaceutical manufacturing, personal care, food and beverage, chemical, aerospace, healthcare and government agencies. At ILC Dover, quality is a culture, not a measurement. Our customers will tell you that we cater to their every need and that we're highly innovative, responsive, dedicated and competitive. We have been innovating since 1947. ILC Dover's visionary solutions improve efficiency, safeguard workers and product, and prevent disasters — proof that we are on the front line of business excellence.

**Engineering evolution beyond boundaries.**



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