

Key Considerations for Designing Tray & Lid Packaging for Lunchmeat or Cheese

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The face of lunchmeat packaging has changed dramatically since 2002 when the first reclosable tub and lid package came on the scene. Now, sliced and shredded cheeses are undergoing a similar revolution.

Sturdy tray & lid packages deliver a perception of freshness and quality that helps brand marketers differentiate their products in the meat, deli and dairy cases. At the same time, these packages provide conveniences that build consumer loyalty, such as easy opening, complete product access, simple dispensing, reclosability, reusability and portability.

There are essentially three tray & lid formats that provide the necessary barrier properties to protect cheese or lunchmeat:



- A.) Non-barrier tray & non-barrier lid with barrier pouch packed inside
- B.) Barrier tray with non-barrier lid and barrier VSP or lidding film
- C.) Barrier tray with barrier lidding film




So which format is best for your application? And what features should you design into your package? The answers depend on a number of variables. This paper walks you through each phase of the packaging life cycle to explore those variables, starting with the “last” phase first.

1. Sustainability Considerations

In today’s marketplace, your package’s environmental scorecard may be critical to getting the distribution you desire. With tray & lid packaging, the level of environmental impact depends largely on the material you choose. The environmental features of the three most commonly used tray & lid materials are explored in the table below.

It’s worth noting that until recently, many tray & lid packages contained polyvinyl chloride (PVC), but retailers are pushing to remove PVC packaging from their stores because of the negative impact chlorine can have on the environment.

Environmental Features of Most Common Tray & Lid Materials

	Polyester/PET	Polypropylene	HIPS
Overall attributes	High clarity, strong, tough. Excellent oxygen and moisture barrier. Highest cost.	Strong, tough. Good heat resistance. Good moisture barrier.	Hard, easily formed. Lowest cost.
Overall performance on environmental scorecard	Scores best.	Scores second.	Scores third.
Symbol			
Most commonly used for...	<ul style="list-style-type: none"> ▪ Barrier tray with barrier lid ▪ Barrier tray with non-barrier lid and barrier VSP or lidding film 	<ul style="list-style-type: none"> ▪ Non-barrier tray & non-barrier lid with barrier pouch packed inside 	<ul style="list-style-type: none"> ▪ Non-barrier tray & non-barrier lid with barrier pouch packed inside

Environmental Features of Most Common Tray & Lid Materials (continued)

	Polyester/PET	Polypropylene	HIPS
Reduce	Because of its strength, less material is required to achieve protective properties, allowing downgauging opportunities.	NA	NA
Reuse	Not microwave or dishwasher safe.	Most widely reused because it is microwave and dishwasher safe.	Dishwasher safe only.
Recycle	Most recycled material.	Not widely recycled. Requires lamination of secondary material to achieve oxygen barrier, which changes it to a #7.	Not widely recycled. Requires lamination of secondary material to achieve moisture or oxygen barrier, which changes it to a #7.

Another key consideration affecting environmental impact is the number of components in the package. Fewer components usually (though not always) mean:

- Less waste
- Less energy required to produce the package components
- Less energy required to transport the package components

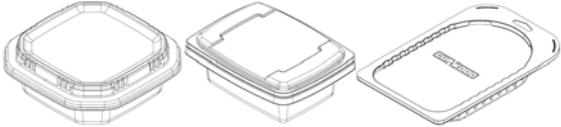

The tray & lid package style that requires the fewest components is the barrier tray and barrier lid, which can be either pre-made or rollstock. Other components are sometimes added for shelf impact or tamper evidence, such as:


- Secondary labels
- Paperboard or shrink sleeves

Printed lidding films allow fewer components since secondary labels or sleeves are eliminated.

2. Consumer Considerations

You've heard it before: to consumers, the package IS the product. Packaging that is easy to open and use leads to customer satisfaction, loyalty and repeat purchases. Plus, your package has to communicate quality without seeming overpackaged. Here are some considerations for creating a tray & lid package that helps earn repeat customers:


Feature	Things to consider
Easy opening	<ul style="list-style-type: none"> ▪ An easy-open pull tab is often designed into the lidding film or lid to aid in opening. ▪ An easy-peel feature can be engineered into lidding film, tub or semi-rigid forming film to ensure the package opens cleanly and reliably.
Reclosability Reclosability (continued)	<ul style="list-style-type: none"> ▪ The style of reclosability is greatly affected by whether you purchase pre-made trays & lids or form them in-line. <ul style="list-style-type: none"> ○ It's difficult to achieve the tight tolerances required for a "snap-tight" feel with lids produced in-line. ○ Pre-made lids allow a "snap-tight" fit, including: <ul style="list-style-type: none"> ▪ Snap-over (not watertight) ▪ Snap-in (watertight) ▪ Snap-in (not watertight) <div style="text-align: center;">  </div> <ul style="list-style-type: none"> ▪ Materials expand and contract at different rates, which needs to be considered when designing the tray and lid in order to achieve predictable closure. Once materials and gauges are selected, either one may only be changed with expensive tooling modifications.
Reusability	<ul style="list-style-type: none"> ▪ Polypropylene tub and lid packaging is dishwasher and microwave safe, making it most suitable for multiple uses.
Product access	<ul style="list-style-type: none"> ▪ Lids can be designed for complete removal and complete product access, which means delicate meats and cheese can be removed without tearing.
Dispensing	<ul style="list-style-type: none"> ▪ Lids can be designed with special dispensing features, e.g., a shaker top for shredded cheese, or a sliding lid for any lunchmeat or cheese. <div style="text-align: center;">  </div>
Portability	<ul style="list-style-type: none"> ▪ Sturdy tray & lid packaging is easy to take along wherever consumers go. Easy-open/reclose options allow easy access without having to haul scissors or storage containers along.
Product enhancement	<ul style="list-style-type: none"> ▪ Tray & lid packaging can help create unique new products, such as:

	<ul style="list-style-type: none"> ○ Multi-compartment meal or snack kits. Trays can be designed to be filled separately and connected later—a benefit if combining foods produced in separate plants. ○ Folded portion-control packs like this multiple lunchmeat pack 
Quality feel	<ul style="list-style-type: none"> ▪ The robust feel of tray & lid packaging projects a natural perception of quality that must be balanced with the value of the product it contains, as well as the environmental footprint of the package. Multiple components can make the product appear overpackaged, though consumer perceptions are positive if they get more value out of the package (e.g., if it is reusable).

3. Retail Considerations


In a fragmented marketplace, packaging has to work harder than ever before to attract attention, reinforce brand identity and communicate quality. In addition, it has to deliver long shelf life, use space efficiently and provide tamper evidence. Here are some ways to make your tray & lid packaging work smarter AND harder at retail:

Requirement	Things to consider
Shelf impact	<ul style="list-style-type: none"> ▪ Tray & lid packaging can be designed in any shape, color or size to stand out from surrounding packaging. ▪ Lidding film can be printed with high-impact flexo or rotogravure printing, or colorful secondary labels or sleeves can be added.
Brand identity Brand identity (continued)	<ul style="list-style-type: none"> ▪ Trays or lids can be embossed with the brand name for maximum brand exposure. ▪ Tray or lid material can be pigmented in a signature brand color, though custom pigmenting requires very high production quantities to be cost-effective. ▪ Trays can be shaped in the form of brand characters, with the character's likeness printed on lidstock for dramatic effect.
Quality	<ul style="list-style-type: none"> ▪ Thicker materials with robust structural integrity provide a "feel" that connotes quality. This also enables products to be stacked without product damage, reducing the amount of protective components required. ▪ High-clarity materials allow consumers to see the quality of the meat or cheese enclosed. ▪ Fade protection may be required to protect products like turkey and ham. Roast beef is extremely sensitive to color fade and requires opaque black film to protect it. ▪ Films may be treated with anti-fog agents to keep the surface free from condensation or grease.
Shelf life	<ul style="list-style-type: none"> ▪ Today's material science, combined with gas-flush

	<p>technology, creates packaging capable of delivering shelf life upwards of 60 days for processed meats and 90 days for cheeses.</p> <ul style="list-style-type: none"> ▪ Oxygen-scavenging materials can be incorporated into the rigid film to extend shelf life.
Retail display	<ul style="list-style-type: none"> ▪ Tray & lid packaging can be designed to peg, lay flat or stand up—or some combination thereof.  <ul style="list-style-type: none"> ▪ Peg features can be designed for easy removal to aid with product rotation. ▪ The package size and material need to function with new spring-loaded racking systems. ▪ Consider nesting/stacking ability for ease of transport and display.
Tamper evidence	<p>Options for making your tray & lid package tamper-evident include:</p> <ul style="list-style-type: none"> ▪ Tape lid to tray ▪ Use paperboard sleeve that's glued to package ▪ Use an EZ Peel® sealant that whitens after it opens ▪ Shrink a sleeve over the package

4. Distribution Considerations

A fundamental goal of any package is to get the contents to its destination intact with the least amount of expense. Tray & lid packaging is no exception. Here are things to consider:

Requirement	Things to consider
Product protection	<ul style="list-style-type: none"> ▪ Tray & lid packaging is ideal to protect products that might be damaged if crushed, such as sliced cheese. The structural integrity of the package prevents pressure that can cause sliced cheese to knit together. ▪ The fit of the master carton containing tray & lid packaging is critical. Packages that fit snugly in the carton will resist movement that can cause damage.
Space utilization Space utilization (continued)	<ul style="list-style-type: none"> ▪ Consider how your package uses space both before the package is formed/filled and as finished goods. <ul style="list-style-type: none"> ○ Rollstock is more space-efficient than empty pre-made trays/lids. ○ Design trays/lids to nest to minimize excess space in the master carton. ○ Keep head space for gas flushing to a minimum to improve your package-to-product ratio. 
Transport costs	<ul style="list-style-type: none"> ▪ The more space-efficient the package, the lower the transport costs. ▪ PET-based trays & lids require the least amount of

	material, minimizing overall weight. However, they also require the greatest amount of separation between nested trays in order to get them apart. The net effect is slightly higher transport costs.
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5. Manufacturing Considerations

The final set of variables to consider before you can choose a tray & lid format and design an effective package is in the manufacturing area.


The first decision is whether to package in-house or use a contract packager. Variables affecting this decision go beyond the scope of this paper, but a few obvious considerations are:

- whether the product is being produced on a test-market or full-production scale
- whether you have the right equipment
- whether you have the capacity
- whether the volume justifies purchase of new equipment

The second decision is whether to purchase pre-made trays and lids, or to form them in-line. All three of the package types we introduced at the beginning of this paper can be pre-made or formed/filled/sealed in-line. Generally, though, you wouldn't put a secondary package inside a package formed in-line. Here are some variables to consider:

Consideration	Pre-Made	Form/Fill In-Line
Volume	Unless you have equipment already, pre-made trays & lids will be more cost-effective for low-volume production, but the trays/lids themselves are expensive and labor-intensive to fill.	Automated, in-line production is most cost-effective for high-volume runs. Today's equipment can run 3-4 across for each index and completely automate filling and sealing.
Equipment investment	Requires tray sealer, gas-flush equipment and possibly secondary form/fill/seal equipment to produce gas-flushed form/non-form pouch.	Requires form/fill/seal and gas-flush equipment.
Stock vs. custom	<p>Can purchase pre-made "stock" or custom trays & lids.</p> <ul style="list-style-type: none"> ▪ Stock considerations <ul style="list-style-type: none"> ▪ Limited number of shapes ▪ Doesn't differentiate brand ▪ Less expensive/don't have to invest in forming die ▪ Faster turnaround ▪ Custom considerations: <ul style="list-style-type: none"> ▪ Can design shape, size, colors you choose ▪ Allows flexibility in lid design ▪ Must meet minimums 	<p>Custom only. Considerations:</p> <ul style="list-style-type: none"> ▪ Can design shape, size, colors you choose ▪ Limited flexibility in lid design

Other factors that come into play include how substantial you want your package to feel; how deep the tray must be; what type of lid you want; the source of your barrier; and what type of label you require. Here's a side-by-side of those considerations:

Consideration	Pre-Made	Form/Fill In-Line
Tray & lid material thickness	Allows thicknesses up to 50-55 mils for a substantial "feel."	Mil thickness under 20 mils required to facilitate in-line cutting.
Tray depth	Shallow to deep draw (up to approximately 5.5 inches).  <i>(Shallow, Medium, Deep)</i>	Shallow to medium draw, though some newer equipment with plug-assist allows deeper draw.
Lid style	Allows "snap fit" lids with tight tolerances.	Difficult to achieve tight tolerances for a good snap-tight fit.
Barrier source	Fill & seal options: <ul style="list-style-type: none"> ▪ Secondary form/non-form barrier-package inside outer non-barrier package ▪ Gas flush package with barrier in both tray and lid or tray and lidding film 	<ul style="list-style-type: none"> ▪ Gas flush package with barrier in both tray and lid or tray and lidding film
Type of label required	<ul style="list-style-type: none"> ▪ Labeling options include: <ul style="list-style-type: none"> ▪ Printed lidding film ▪ Printed lidding film with ink-jet customization ▪ Paper label rollstock glued to top ▪ Paperboard sleeve ▪ Printed shrink sleeve 	<ul style="list-style-type: none"> ▪ Labeling options include: <ul style="list-style-type: none"> ▪ Printed lidding film ▪ Printed lidding film with ink-jet customization ▪ Paper label rollstock glued to top ▪ Paperboard sleeve ▪ Printed shrink sleeve

Bringing It All Together

As with all types of packaging, many factors must be considered before designing an effective tray & lid package. Sometimes the considerations are competing—adding a sleeve to draw attention and provide tamper evidence can make the product look overpackaged and make the package less environmentally friendly. To get snap-tight closure, you may have to forfeit the cost benefits of forming the package in-line. And so on.

The chart below helps you see all the considerations in one place. For assistance developing your next tray & lid package, including evaluating packaging options with Wal-Mart Scorecard modeling, please contact your Curwood representative, or call us at 800-544-4672.

Tray & Lid Design Considerations

Sustainability	Consumer	Retail	Distribution	Manufacturing
Material <ul style="list-style-type: none"> ▪ Reduce ▪ Reuse ▪ Recycle 	Easy opening	Shelf impact	Product protection	In-house vs. contract packager
Number of package components	Reclosability	Brand identity	Space utilization	Pre-made or form/fill/seal in-line
	Reusability	Quality	Transport costs	Volume
	Product access	Shelf life		Equipment investment
	Dispensing	Retail display		Stock vs. custom
	Portability	Tamper evidence		Material thickness
	Product enhancement			Tray depth
	Quality feel			Lid style
				Barrier source
				Label type



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