This article describes the advantages of three common oral solid dosage packaging forms and discusses factors to consider when selecting packaging for a new product.

Whether you are launching a new product or enhancing a longstanding, strong seller, a product’s packaging is critical to its success. The first and, arguably, most important factor to consider is the packaging’s ability to protect the product and maintain its quality. Strong packaging choices are essential for brand performance. But how do you decide whether to use a pouch, blister, or bottle? What benefits do each of these packaging types offer to various kinds of products? You can improve your packaging decisions by...
considering the end user’s experience with the product and conducting a cost-benefit analysis of each package type, as well as the materials available.

**Pouches**

Pouches are the standard in the food industry for packaging powders, granules, and certain solids. Pharmaceutical and nutraceutical companies often choose pouches for tablets, capsules, and other single-dose products. Pouch packaging has become popular because it offers a small waste stream footprint at low cost and with minimal to no tooling. Pouches provide ample space for printing high-quality graphics and necessary regulatory information. A multitude of products in various sizes and consistencies can be easily and efficiently packaged in a pouch.

Pouch packaging is tremendously versatile, with a number of film choices, seal alternatives, and printing options. Contract packagers specialize in understanding the best materials and techniques for packaging specific products. Choosing the best packaging material for a product often requires a cost-benefit determination. Manufacturers want the most attractive, functional, and inexpensive packaging design and material. However, an increasing number of products contain ingredients that are sensitive to environmental conditions, which means that protecting the product must be integral to the packaging design and material selection.

Pouch packaging can be tailored to suit special opening requirements, such as easy opening, child proofing, or the ability to reseal. For example, paper laminations do not require an opening notch but also don’t allow for resealing. Special folding and tear notches offer child proofing. Sealant layers can improve the containment of a dusty product.

Choosing the correct film for your product and application is essential. Moisture and oxygen are two significant shelf-life concerns. For products that are moisture sensitive or may be stored in wet or humid environments, a polyethylene terephthalate (PET) surface layer with over-varnish to lock in the print may be your best option. Paper pouch film with foil also provides extra product protection.

Most manufacturers tend to focus on moisture, but often oxygen, or the oxidation process, is what breaks down some dietary supplement active ingredients. D-ribose, for example, is used in many dietary supplements for its energy enhancing properties. However, it is hygroscopic, and moisture can cause it to change color after just six hours of exposure.

Also, when D-ribose is in solid-form products, such as mint tablets, the tablets will soften after six hours of exposure to a moist environment. The safest approach to moisture and oxidation protection is to use packaging materials that have a foil layer, because foil allows almost no oxygen or moisture to enter the package.

**Blister packs**

Typically, blister packs for foods and pharmaceuticals are formed by pairing a base material with cavities or pockets that hold products with a lidding material such as push-through foil or foil-laminated film. The formed base material and the lidding material are heat sealed, creating a perimeter binding that seals each individual product in its own protective cavity.

While using foil material is easy when packaging dietary supplements into pouches, it can present a challenge when packaging in blisters. Some blister machines can handle foil as both the base material and the lidding material, although it is more common to use a plastic material as the base material and a push-through foil as the lidding material.
Blister packaging produces a flat advertising surface on the lidding material. In some applications it's possible to print on both sides of the lidding material so that your marketing message shows through the clear base material and integrates the blister contents into the message. The product becomes the point-of-purchase marketing message through attention-grabbing graphics offset by product visibility through the clear plastic base material. For certain products, the consumer's ability to see the actual product, such as a tablet, mint, or gum, can positively influence their buying decision and is better than any graphic image on the packaging.

Blister packaging is popular in retail settings because it's easy to display. A punched hang hole allows the blisters to be hung rather than shelved. Products with a hang hole do well in point-of-purchase (POP) displays, which can be a bonus to retailers. And if retailers do hang the package near a checkout counter, the product’s sales are likely to be boosted from impulse buying.

The most common blister material is polyvinyl chloride (PVC), which is relatively low cost but offers only minimal protection against moisture and oxygen. Multi-layer films made from PVC coated with Aclar (a proprietary fluoropolymer film manufactured by Honeywell) or polyvinylidene chloride (PVDC) offer much better protection but at a substantially higher cost.

Blister packs are easy for consumers to open and are ideal for applications where the packaging must protect the remaining doses as the consumer uses the product. Perforations between the cavities allow individual blisters to be separated from the rest of the package while retaining the packaging’s structural integrity. Blister packaging is also ideal for hygroscopic or oxygen-sensitive products because it minimizes the product’s exposure to air.

**Bottles**

Bottle packaging is a safe, cost effective way to package large quantities of a product. Bottles are often used with capsules, tablets, softgels, and even powders. Bottle packaging is easy to open but can be sealed with tamper resistant lids for pharmaceuticals that should have limited access. Bottles are recyclable and shatter proof and come in a variety of sizes and colors. However, the labeling options for bottles are more limited than for other forms of packaging.

**Case study**

Recently, Ruspak accepted the challenge of designing packaging for a mint that contained D-ribose. The client preferred blister packs to pouches so our engineers designed an eight-count blister, which was then put into an automatically erected, reverse-tuck carton. The final package consisted of 12 cartons in an open tray.

Because pouches can be an affordable and brand-supportive alternative to blister packaging, the engineers also designed an aluminum foil pouch that held two mints. Three groups of eight pouches were then inserted into a three-section counter display. After the first eight pouches were sold, the first divider included a message reminding customers of the product’s “superior energy.” When the second eight pouches were sold, the second divider included a message stating that the product was “fast acting.” When the third eight pouches were sold, it was time for a new, full carton.

The dietary supplement business is very competitive, resulting in cost consciousness at every level. This cost consideration led the client to choose pouches over blister packs for the mint product. Retail sales results indicate that consumers also like the colorful pouches, and retailers are satisfied because the cartons fit on the counter right next to the cash register to stimulate impulse buys.

**Selecting a packaging type**

Consider the following questions when choosing your primary packaging type:

- Who will use my product?
- Where will it be sold?
- What type of display is necessary or desired?
- What elements such as moisture or oxygen might impact product stability?
- Do I want or need high-end graphics to entice a buyer?
- How much information is required to be printed on the package?

![Figure 1](image)

**Choosing the right package and material**

- Who will use the product?
- How much information needs to be printed on the package?
- How will the product be stored?
- What is the form of the product?
- Will oxygen or moisture impact the product?
- What graphics are used with this product?
- What type of display is necessary or desired?

As Figure 1 shows, the answers to these questions will lead you to the optimal packaging. If you have a packaging challenge that requires intimate knowledge of packaging forms and materials, consult an expert in co-packaging and use the answers to these questions to begin your conversation. You may have an idea of what will work but being open to alternative suggestions from a packaging professional could help you achieve greater success. Often, the best packaging method is not your first choice.

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