



How to Choose the Right Film Facestock:

Pressure Sensitive Label Application Decisions For The HPC, Food And Beer/Beverage Markets

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It's just not as simple as white or clear. When choosing a film facestock for a pressure sensitive label application, every aspect of the labeling process can impact outcome. Knowing the answers to questions about the package to be labeled, facestock, label design, adhesive type and environmental conditions is how today's converters make sure their jobs run smoothly.

What are the important questions? Here are some of the ones we at Avery Dennison ask converters before we make a product recommendation. They can also be found on our downloadable Label Selection Questionnaire. ([link](#))

Package To Be Labeled

Is the substrate HDPE, LDPE, PET, PP, glass or PVC?

Are you working with a high or low energy substrate? High energy substrates include PET, glass and metals. HDPE, polypropylene and LDPE are low energy substrates. Why does this matter? Labels adhere more easily to high-energy substrates but remove more easily from low surface energy materials.

Is the container shape flat, curved, rounded, with a corner or a small diameter less than 1 inch?

Is it rigid or squeezable?

In general, rigid films can be used on flat or curved containers, as long as they're non-squeezable and the surface area to be labeled is also flat. Stiffness is an important performance property for film and is determined by the thickness and modulus (rigidity) of the label. As you reduce the thickness of a film it becomes less stiff, making it more difficult to dispense and put on a container.

Any container that's squeezable, has a "waist" or is egg-shaped requires conformable films for labeling. Conformability is controlled by the modulus (rigidity) of the film as well as its orientation when it is manufactured.

- > Unoriented films – like PE – are films that have not been stretched in manufacturing to align polymer chains. These films have a low modulus (rigidity), making them soft and very conformable. However, their convertibility and dispensability is inferior.
- > Biaxially oriented films – such as BOPP – are films stretched to align polymer chains in both the machine direction and cross direction. They have a high modulus, making them quite rigid. They offer poor conformability, but excellent convertibility and dispensability.
- > Machine direction oriented (MDO) films – films stretched in the machine direction to align polymer chains – offer it all, with excellent conformability, convertibility and dispensability. Avery Dennison has a patented MDO and co-extrusion process that creates a polyolefin facestock – Global MDO -- that's ideal for pressure sensitive applications and highly valued for its good looks and printability.
- > In pursuit of shelf appeal, designers are constantly pushing the envelope in container design, creating more complex shapes and sizes. These containers may require unique labeling solutions like Avery Dennison's MDO films. MDO films have an excellent track record when used to decorate these more complex packages.

How to Choose the Right Film Facestock:

Is the substrate painted, textured, smooth, glossy, dry, greasy or hot?

These surface conditions do not affect facestock selection, but do directly affect the adhesives used.

Does the package need to be recyclable?

When it comes to recyclability, many of the things converters need to consider are changing. While Avery Dennison offers films with a density less than water – often preferred for recyclable packaging – we believe the experts best understand this issue. We recommend converters utilize the “Design for Recyclability Guidelines” from the Association of Postconsumer Plastics Recyclers available at www.plasticsrecycling.org

Film Facestock

Do you want a facestock that's white, clear, or metallized?

Gloss or matte?

PP, PET, PE, PVC, or Polyolefin?

These choices can significantly impact label aesthetics as well as performance. Over time, certain films have evolved as “the film of choice” for particular performance requirements. For example, PP is one of the most rigid film materials available. As a result, it is frequently used in beer and beverage applications where high clarity is needed. PET is a highly durable, heat-resistant film that is excellent for demanding high-heat applications like labeling electronics. PVC is typically found in label applications for outdoor exposure due to its durability. As the most conformable film, PE is often used to label curved containers. However, it can present problems with convertibility due to its polymer composition.

The Label

Is the label very tiny or very large?

Label shape and size should also be considered by converters before making a material selection. Extremes in label design can be hard to manage and dispense. In general, the container “live” area for labels is 1/2” from the bottom and 1” from the top with a 170° wrap. Although a flat surface is preferred for labeling, conformable films perform better on container ridges, bumps and shaped edges over rigid films. MDO films might give you a wider operating window and better performance as the label shape and size become more complex.

Adhesive

What type of adhesive do you want?

Do you want it to be permanent, removable or repositionable?

Our prime films portfolio matches film facestocks with specific adhesives to provide you with the best possible permanent, removable or repositionable performance. Of course, each film bonds differently with each adhesive used, making every labeling situation unique for repositionability and removability.

In addition, the container has a huge impact on these two performance characteristics.

Here are some general guidelines to consider when choosing an adhesive technology.

HOT MELT:

- > Coated in a molten state
- > Typically the lowest cost
- > Generally not suitable for film constructions
- > Yellowish tint
- > Primarily rubber-based adhesives

SOLVENT:

- > Coated as a solvent solution
- > Has an environmental cost
- > Robust performer
- > Provides and maintains high clarity
- > Rubber and acrylic adhesives

EMULSION:

- > Coated with components suspended in water
- > Provides and maintains high clarity
- > Offers a wide range of performance
- > Primarily acrylic-based adhesives.

How to Choose the Right Film Facestock:

Application Examples

Looking for a clear-on-clear film?

- > If you're working with a typical rigid container, BOPP might be the right choice for you.

Using a polyethylene shampoo bottle?

- > If so, you won't need a clear label. However, the bottle's squeezability dictates a conformable film choice.

How do you handle labeling tubes?

- > Always with a conformable film.

Using a glass bottle for wine or beer?

- > You might think a rigid film is the best way to go. But actually, a conformable film looks much better. It takes on the surface characteristics of the glass, offering high clarity with no trapped air bubbles. Plus it goes over seams beautifully.

Labeling a pharmaceutical syringe?

- > Look at a conformable film with a solvent adhesive.

Hand applied size strips for a clothing application?

- > We recommend an MDO film and an apparel adhesive that will remove without leaving residue.

Labeling a reclosable package?

- > Depending on the package contents, either BOPP or MDO films will work when paired with the right adhesive.

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