



How Is Polyester Film Made?

Melinex® film is a biaxial oriented specialty polyester film that belongs to the family of polyester brands produced by DuPont Teijin Films™. Melinex® Polyester Film is a thermoplastic film made from ethylene glycol and dimethyl terephthalate. This type of film requires the correct combination of chemistry and technology to produce the best possible product. The following steps outline what the polyester film creation process looks like:

- Molten polyethylene terephthalate (PET) polymer is first extruded onto a chill roll drum to form film.
- The film is then biaxially oriented by being stretched first in the machine direction (MD) and then in the transverse direction (TD).
- The orientation is accomplished by passing the film over rollers that run at increasingly faster speed (MD orientation), then fed into a stenter frame, where it is pulled at right angles (TD orientation). This stretching rearranges the PET molecules into an orderly structure to substantially improve the film's mechanical properties.
- Finally, the film is heat-set to stabilize it. It will not shrink again until exposed to its original heat-set temperature.

The Biaxially Oriented Stretching is the Key

When polyester is stretched in two different directions, the polymer strands become aligned, giving polyester film high tensile strength; in other words, the film can withstand a great deal of pull without tearing or breaking.

This tensile strength allows for polyester to be used in applications where an extremely thin material is needed, such as a membrane touch switch on a microwave. Polyester is very durable and can take the punishment of numerous key-pad actuations. Polyester also has exceptional chemical resistance so it will not easily get damaged by common household cleaners.

Properties of Melinex® Polyester Film

Melinex® polyester film has an excellent combination of properties, which makes it useful in a wide variety of applications: laminating, stamping or forming, printing, punching, corrugation, and embossing to name a few.

- Excellent temperature resistance
- Strong tear initiation and puncture resistance
- Superior chemical resistance
- Ease of handling on high-speed equipment
- Excellent oil, grease or moisture-barrier resistance

For any questions, please [contact us](#) online or call (800) 448-3572.

Source: Introduction to Mylar® Polyester Films DuPont Teijin Films™