

Mylar®

polyester film

Introduction to Mylar® Polyester Films

Mylar® is a biaxially oriented, thermoplastic film made from ethylene glycol and dimethyl terephthalate (DMT).

Since DuPont first introduced Mylar® polyester film in the early 1950s, it has been used in a variety of applications that add value to products found in virtually all segments of the world economy. After more than 40 years, the future still holds great promise for Mylar®. Its excellent balance of properties and extraordinary range of performance capabilities make Mylar® ideal for a broad array of applications in the electrical/electronics, magnetic media, industrial specialty, imaging/graphics, and packaging markets.

Equally important to the versatility of Mylar® is its environmental friendliness. It is one of the most environmentally safe polymer products made today.

Mylar® polyester film, only by DuPont Teijin Films, is available uncoated or coated and in a broad variety of gauges and widths. We are committed to continually developing and improving our product offering. If you have an idea or a special need for a new film, we're ready to explore the possibilities. Just speak with your DuPont Teijin Films sales representative or give us a call at (800) 635-4639.

Balance of Properties

Mylar® polyester films have a unique combination of **physical, chemical, thermal, and optical** properties:

- **Strong, tough, brilliant, and clear.**
- **Ease of converting:** laminating, extrusion coating, embossing, metalizing, printing, punching, corrugation, dyeing, stamping or forming.
- **Ease of handling on high-speed equipment.**
- **Retain mechanical properties:** stiffness, strength, toughness, dimensional stability, and optical clarity, over an exceedingly wide range of temperatures.
- **Excellent temperature resistance.**
- **Readily combined with other materials.**
- **Strong tear-initiation and puncture resistance.**
- **Excellent oil, grease, or moisture barrier resistance.**
- **Excellent chemical resistance.**

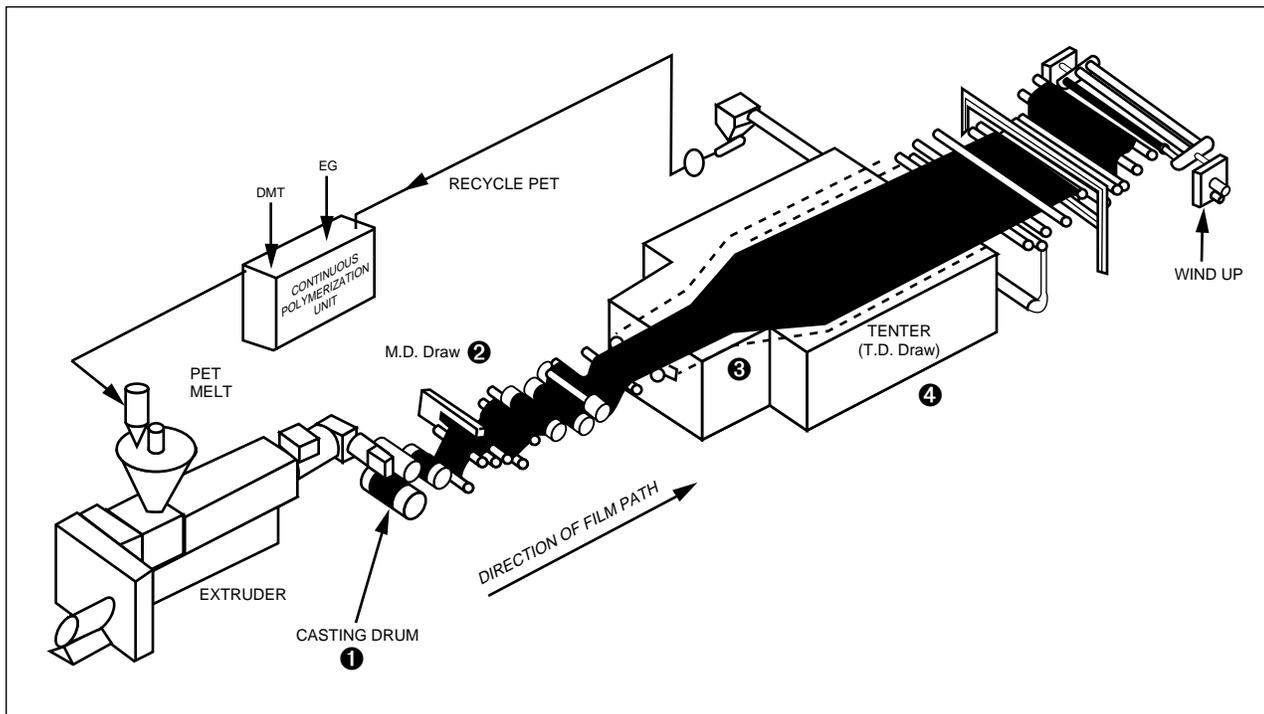
How Mylar® Is Made (Figure 1)

- Molten polyethylene terephthalate (PET) polymer is first extruded onto a chill roll drum to form a film. ❶
- This film then is biaxially oriented by being stretched first in the machine direction (MD) ❷ and then in the transverse direction (TD).
- The orientation is accomplished by passing the film over rollers ❸ that run at increasingly faster speeds (MD orientation), then fed into a tenter ❹

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. (Films stretched in the machine direction only are uniaxially oriented; films stretched in both directions are biaxially oriented.)

- Finally, the film is heat-set ❺ to stabilize it. It will not shrink again until exposed to its original heat-set temperature.

Figure 1. A Typical Manufacturing Process for Oriented Polyester Film



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