

Film for
Thermoform
Packaging



KLÖCKNER
PENTAPLAST

PENTAFORM®





Klöckner Pentaplast: Value in Packaging Films

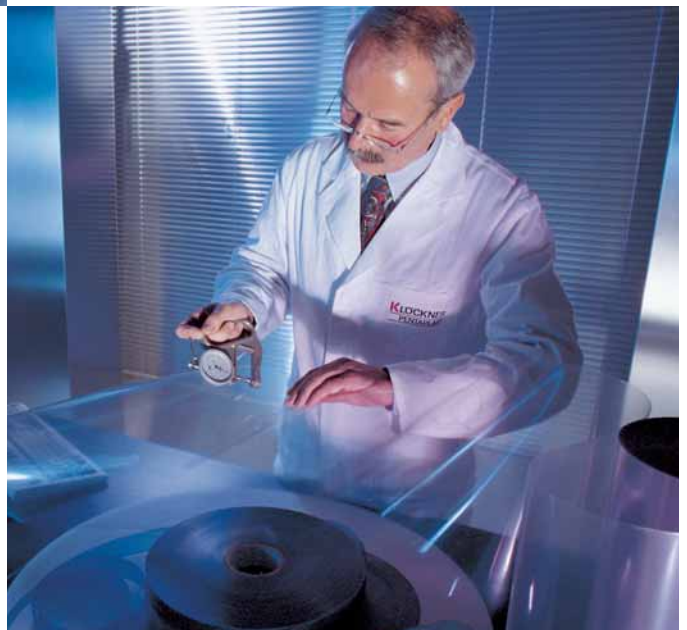
Extensive Product Range

Klöckner Pentaplast of America, the leading global film manufacturer, offers a full spectrum of thermoforming films. Our specially formulated Pentaform® films include vinyl, PETG, APET, and BAREX®. We maintain this broad range of films precisely because it allows us to provide the most cost-effective solutions for you, whatever your specific needs.

Manufacturing Excellence

We engineer quality into all our products. We retain 100% control of raw materials and employ the most advanced calendering and extrusion technology available, allowing us to deliver films in a full range of thicknesses exactly to your specifications.

Because our tolerances are so close, you can write tighter specifications, yielding considerable savings in material cost. As a result, you enjoy the convenience and security of Klöckner Pentaplast accuracy, reliability, and production savings.



Commitment to Service

Klößner Pentaplast has assembled the most extensive, knowledgeable domestic sales, marketing, and technical support staff in the industry. We provide you with reliable customer service. Our engineers and quality specialists can develop and test special film formulations. Evaluate sealing, forming, and package designs. Pioneering new films to help you stay ahead of the market developments. And provide direct hands-on technical support to meet all your packaging requirements.



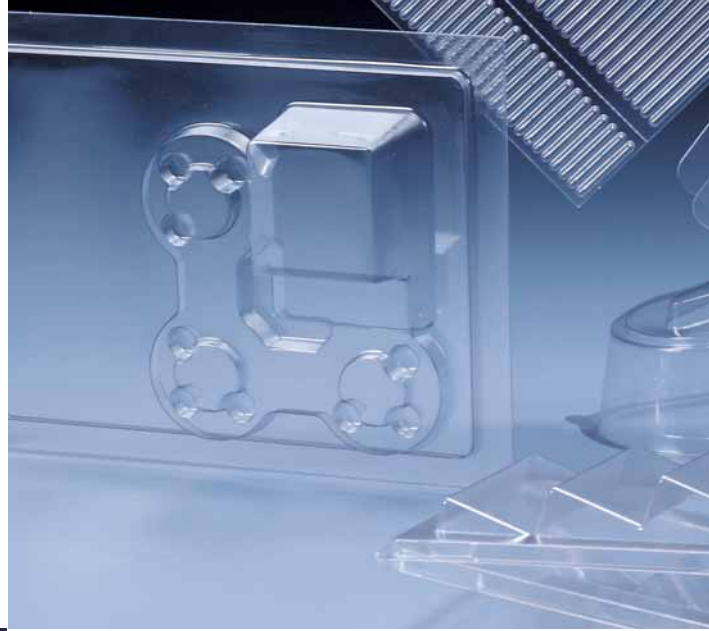
This dedication to service is equally apparent once your order is filled, regardless of global facility. In addition, we certify that every product leaves our factories precisely as ordered. Having our own transportation company, Klößner Intertrans Carrier, guarantees that you will receive top priority when it comes to shipping. Your film is delivered—as specified—on time, all the time. It's that simple.

Dependable Delivery Around the World

At Klößner Pentaplast, we do more than produce the finest in thermoforming films. We build long-lasting relationships with our customers, working with them wherever they manufacture, package, and market their products. We're the only U.S. producer with global sourcing. You can depend on Klößner Pentaplast for short lead times, quality, product consistency, and the best value in thermoforming film anywhere in the world.



Pentaform[®] Packaging Films



High-Performance Films

Whatever your packaging requirements, you can rely on Klöckner Pentaplast to recommend the right film for your needs—vinyl, PETG, APET, or BAREX[®].

- Softer cutting formulations (less knife wear and increased up time)
- Wide window forming range provides consistent forming, more forgiving processing range, and higher throughput
- Excellent drumming characteristics to prevent cold stress of formed parts and ensure accurate shape
- Brilliant clarity
- Deep draws and consistent, uniform material distribution
- Superior sealability (RF, heat, or ultrasonic)
- Easy denesting or automated sealers (one- or two-sided silicone coating)
- Internal antiblocking (PETG/APET)



Quality Manufacturing

Above all, you can depend on Klöckner Pentaplast films for performance, quality, and production economies. At Klöckner Pentaplast, our Pentaform® films are manufactured in a strictly controlled clean environment using the most advanced technology. The result: the best lot-to-lot gauge uniformity in the industry in a full range of products.

- Manufactured in a controlled environment to strictest cGMP standards
- All production facilities are ISO 9001 or ISO 9002 registered
- Typical gauge variation $\pm 2.5\%$ (guaranteed $\pm 5\%$)
- Quality certified—consistent formulation and traceability
- Higher yields—more good parts per pound



Specification Standards

Thickness Tolerance

Typical $\pm 2.5\%$
Guaranteed $\pm 5\%$

Slit Width Tolerance

$\pm 1\text{mm}$ (1/25")

Sheet Tolerance

$\pm 1\text{mm}$ (1/25")

Standard Core ID

3", 6"

Standard Roll OD

14 $\frac{1}{2}$ ", 18", 21"
(Custom ODs available upon request)

Film Options

- Custom formulations
- Gloss, matte, matte/gloss, or embossed surfaces
- Clear, tinted & opaque colors
- Clear tint cosmetic grades
- Custom film thicknesses
- Custom roll widths
- UV stabilized
- Silicone coated (one- or two-sided)
- PETG/APET with internal antiblocking
- High slip formulations
- Deep draw

Wide Forming Window Performance



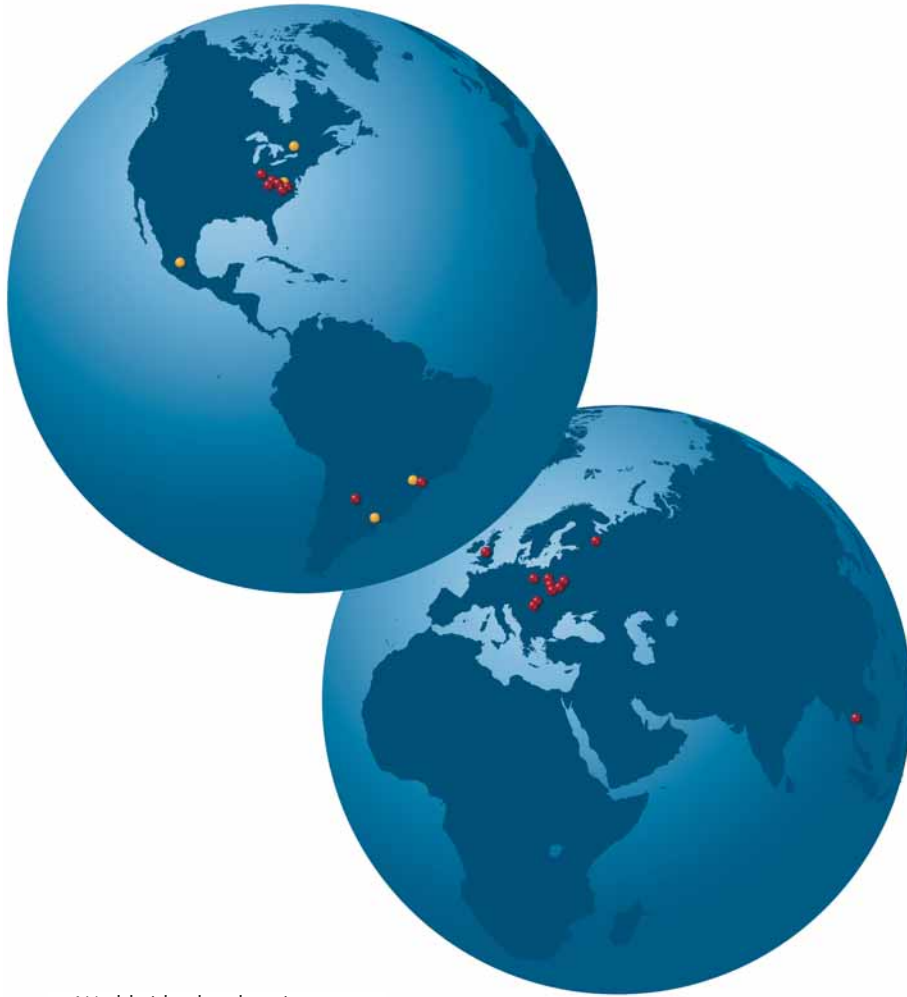
Pentaform® rigid film is engineered with wide forming window thermal profile characteristics making it easier to use than ever before. Excellent forming definition is enhanced at optimal heating conditions, yet is also achievable even when forming cycles need to be increased to get out production. New technology applied to our manufacturing process allows forming temperatures over a wider range, providing more good parts per machine hour.

- Faster cycles
- Better definition
- Less waste
- Better productivity





One Source Around the World



- Worldwide plant locations
- Worldwide sales offices

SALES OFFICES

Klößner Pentaplast of America, Inc. P.O. Box 500, 3585 Klößner Road
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São Paulo, Brasil CEP 02151-900 • 55.11.6951.3646 • 55.11.6951.5931 (Fax)

Klößner Pentaplast de Mexico S.R.L.

Klößner Pentaplast Films. The Options Are Yours.

Pentaform®

A full range of films for vacuum or pressure thermoforming. Excellent forming & sealing characteristics, impact strength, clarity, easy cutting & denesting.

Pentapharm®

Quality-certified films for pharmaceutical packaging manufactured to cGMP standards & FDA & HPB requirements. Drug Master File #3764 & Canadian Drug Master File #8933.

Pentafood®

Film meeting or exceeding all FDA & HPB requirements. Can be used "as is" for food packaging or as a high-barrier substrate for CAP/MAP applications.

Pentamed®

Medical device packaging films manufactured to cGMP standards. Gamma, EtO & E-beam sterilizable. Medical Device Master File #240.

Pentaprint®

Film for printing, graphics arts & shrink applications. Clear tints, transparent & opaque colors. Can be printed using silk screen, offset litho, flexographic, or gravure processes.

Pentastat®

Gloss films with excellent clarity & static dissipative properties for thermoformed clamshells, circuit board packaging & other ESD-sensitive components.

Pentadur®

Film for the stationery industry. May be glued, coated, laminated, lacquered, or metalized. Excellent printing characteristics. Can be scored, stapled, sewn, or welded.

Pentaclear®

Films for transparent lids, boxes, cylinders & sleeves. Excellent optical characteristics, high transparency & brilliant surface.

Pentacard®/Genotherm® Card

Consistently high-quality films for secure & nonsecure cards. Can be used for split core, solid core, overlay, heat-stable & extreme-environment applications.

Pentalan®/Genotherm®/Furnidur®

Printed & nonprinted films with excellent color consistency for furniture film applications. Can be used for 3-D membrane press, flat board lamination, profile wrap & drawer wrap.

Pentalan®

Films for technical applications including print blankets & artificial Christmas trees. Certified films for cooling tower & waste water systems.