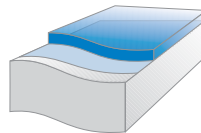


Pentapharm® alfoil® polymer films

Do your pharmaceutical products need protection against moisture and oxygen? How much? kp Pentapharm® alfoil® rigid PVdC-coated films come in numerous structures so you get the exact level of protection you need. At kp, we believe you should never have to settle for a second best solution. With our extensive line of Pentapharm® alfoil® films, we deliver performance tailor-made to your product.

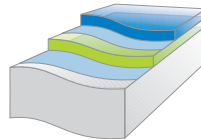
Pentapharm® alfoil® P

Structure:	Duplex PVC/PVdC structure
Barrier Rating:	Mid to high degree of barrier to moisture, gas & aroma



Pentapharm® alfoil® T

Structure:	Triplex PVC/PE/PVdC structure PVC is laminated to PE then coated with PVdC
Barrier Rating:	High degree of barrier to moisture, gas & aroma (higher barrier than duplex)



Pentapharm® alfoil® P SG & Pentapharm® alfoil® T SG

The SG grade of films are engineered with significantly improved slip characteristics for higher machine throughput yields, filling, and higher output as compared to standard PVdC-coated films. While the structure and barrier properties remain the same as standard Pentapharm® alfoil® P and T, higher line efficiency is guaranteed with SG.

Special Features:	<ul style="list-style-type: none">• Enhanced performance• Excellent surface slip characteristics (low coefficient-of-friction) as compared to standard PVdC-coated film for higher packaging line productivity & yield• Better thermoforming properties than conventional PVdC-coated films• Prevents blocking on machine pre-heat plates• No modifications required for pre-heat plates for extra cost savings• More consistent material flow during the thermoforming process• Improved mold & blister-to-blister de-nest properties for higher filling rates for gel caps & other pharmaceuticals• Sealable to all standard vinyl-compatible lidstocks
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Polymers:

Two- & three-layer structures with customized PVdC coatings

Customized structures available upon request

Applications:

Ethicals, OTC, generics, physician samples, veterinary, nutraceuticals

General Properties:

Moisture Barrier:	Mid to ultra high
Oxygen Barrier:	High to ultra high
Thermoformability:	Mid to high
Sealability:	Mid to high
Sterilization:	EtO

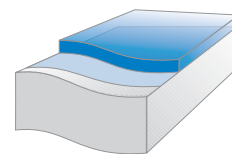
Performance Features:

- Exceptional strength & dimensional stability; controlled shrinkage; minimal neck-down, no curl
- Precise index registration
- Greater rigidity for easier cartoning, handling & enhanced aesthetics
- Excellent machinability, higher yields for more good parts per pound/kilogram
- SG developments for even higher line efficiency
- Sealable to all standard vinyl-compatible lidstocks
- Available in clear, transparent colors & opaque colors
- Runs on standard equipment & tooling

Pentapharm® alfoil® polymer films

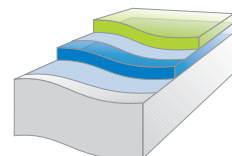
Pentapharm® alfoil® X

- Structure: Duplex PVC/PVdC structure
- Barrier Rating: High degree of barrier to moisture, gas & aroma
- Special Features:
- Higher yield as compared to standard three-layer PVdC-coated films
 - Excellent thermoformability
 - Excellent surface slip characteristics (low coefficient-of-friction) as compared to standard PVdC-coated film for higher packaging line productivity & yield
 - Prevents blocking on machine pre-heat plates
 - No modifications required for pre-heat plates for extra cost savings
 - More consistent material flow during the thermoforming process
 - Improved mold & blister-to-blister de-nest properties for higher filling rates for gel caps & other pharmaceuticals
 - Sealable to all standard vinyl-compatible lidstocks



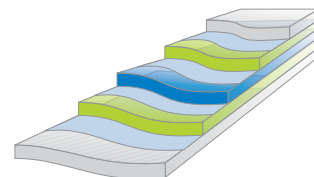
Pentapharm® alfoil® TS

- Structure: Triplex PVC/PVdC/PE structure
Mono film is coated then laminated to PE layer
- Barrier Rating: Mid to high degree of barrier to moisture, gas & aroma
- Special Features:
- PE layer has excellent sealability to itself
 - Ideal for mono-dose, liquid & suppository applications
 - Peelable option available



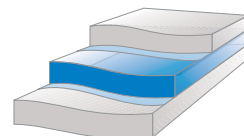
Pentapharm® alfoil® FS

- Structure: Three-component, five-layer symmetrical structure (PVC/PE/PVdC/PE/PVC)
PVC skins with core of PVdC
- Barrier Rating: Ultra-high degree of barrier to moisture, gas & aroma
- Special Features:
- Ideal for demanding climate conditions
 - Symmetrical film improves lay-flatness & eliminates the need for wind orientation; avoids costly operations errors
 - PVC is the contact layer



Pentapharm® alfoil® E

- Structure: Triplex PVC/PVdC/PVC symmetrical structure
- Barrier Rating: Ultra-high degree of barrier to moisture, gas & aroma
- Special Features:
- Only high barrier PVdC-coated film in a three-layer symmetrical structure on the market today
 - Designed for higher performance on packaging lines
 - Excellent thermoforming properties & mechanical stability compared to standard PVdC-coated films
 - Thermoforms in the same temperature range as PVC mono film
 - Consistent material flow during thermoforming process
 - Improved lay flatness
 - High-crystallinity PVdC dispersion allows for higher barrier levels at competitive cost
 - Brilliant clarity for transparent blisters
 - Ultrasonically sealable to vinyl face-seal cards without coatings
 - PVC is the contact layer



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