



Früh Cleanfilm®

Protect to perform.

High Barrier Laminates

High Barrier Primary Packaging

**Typical material structures
in double wounded PP film**

- PET SiOx / PP – PP / PET SiOx
- PET SiOx / OPA / PP – PP / OPA / PET SiOx

Application Fields

- O₂ sensitive products
- Aseptic filled products
- Retort applications
- Biopharmaceuticals
- Single- or multi-chamber bags

High Barrier Secondary Packaging

**Typical material structures
in two or three layer laminates**

- PET AlOx / PP
- PET SiOx / PP
- PET SiOx / OPA/ PP
- PET SiOx / PET SiOx / PP
- PET / Alu / PP

Application Fields:

- Overwrap films
- O₂ sensitive products
- Retort applications

Key Benefits for Primary and Secondary Packaging

- Outstanding gas barrier properties
- Minimized H₂O and CO₂ loss
- High transparency
- Aluminium- and PVC-free
- In-house R&D for customer-specific solutions

General Information for Film Manufacturing

- Converting of laminates under ISO Class 8 conditions and compliant with ISO Class 7 requirements
- Production in compliance with Chinese GMP
- Contact-less web cleaning system, qualified according to ISO 14644

Typical Barriere Values

Laminate	Typical OTR @23°C/50% RH	Typical MVTR @23°C/85% RH
PET AlOx - PP	≤0.6 cm ³ /m ² x d x bar	≤0.6 g/m ² x d
PET SiOx - PP	≤0.5 cm ³ /m ² x d x bar	≤0.5 g/m ² x d
PET SiOx - OPA - PP	≤0.3 cm ³ /m ² x d x bar	≤0.3 g/m ² x d
PET SiOx - PET SiOx - PP	≤0.2 cm ³ /m ² x d x bar	≤0.2 g/m ² x d