Filmic Pressure Sensitive labels

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Content & Introduction

1. Type of filmic facestocks and their properties
2. When to choose filmic labels?
3. Markets and applications
4. Sustainability: future filmic labels
5. Filmic labels reducing environmental impact
6. Q & A

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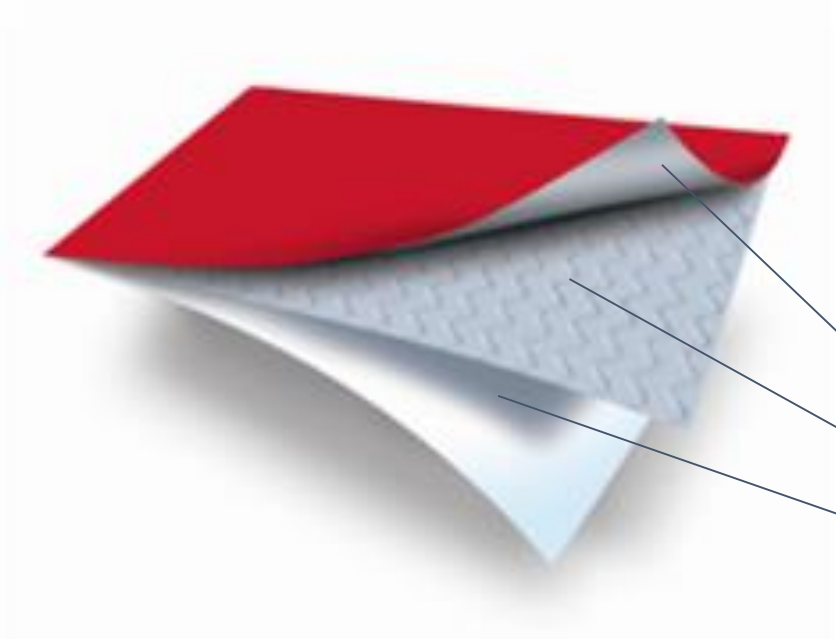
Basic PSA Label Construction



PSA = Pressure Sensitive Adhesive

Top Coat: to improve ink anchorage

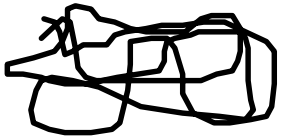
Face stock: Paper or Film (PP, PE, PET, PVC)

Adhesive: Emulsion, Hotmelt or Solvent

Release Liner: Paper or Film

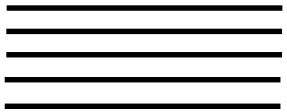
Types of Filmic Facestocks

CONFORMABLE
(PE)



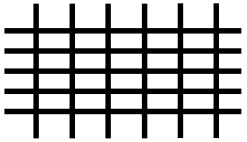
Un-oriented

SEMI-CONFORMABLE (Co-Extrusion)



Machine Direction or Bi-axially Oriented

RIGID
(PP)



Biaxially Oriented

SPECIALTY FILMS

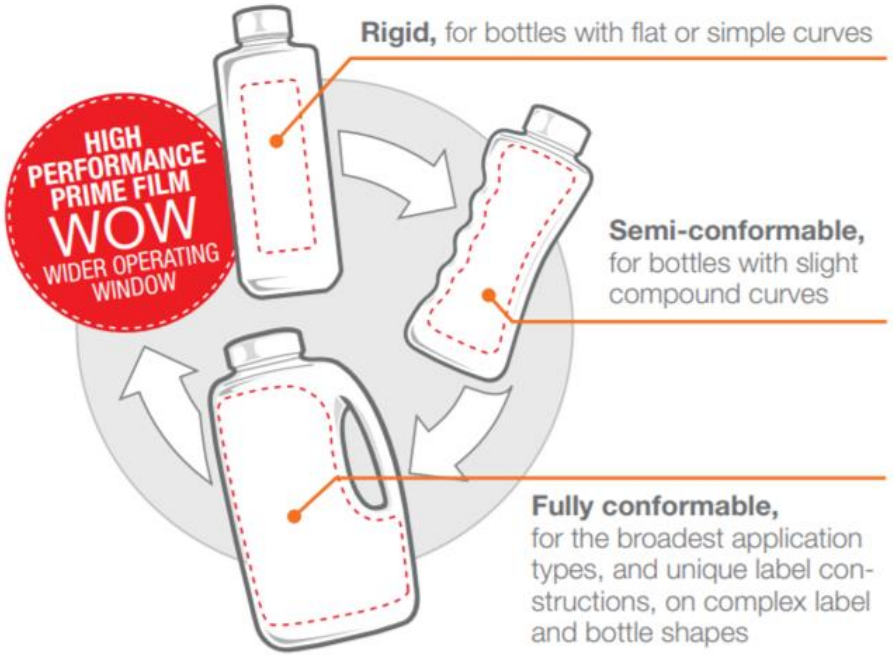
PET

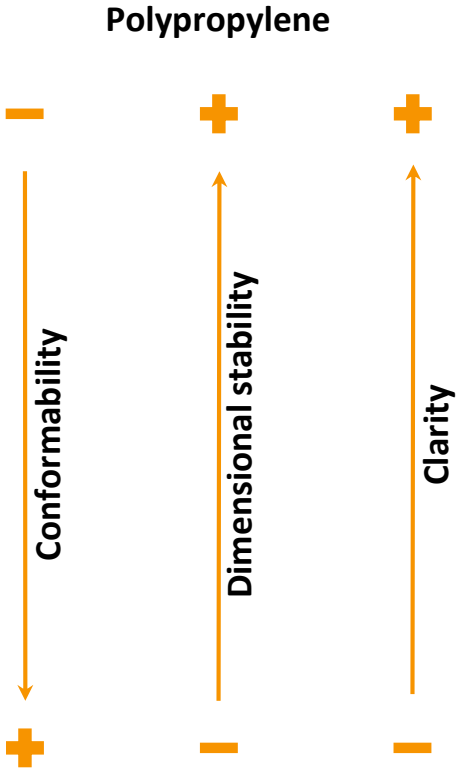
Rigid, High Clarity
High durability
High temperature resistance
Flame retardant

PVC

Flexible
Good outdoor properties
High durability
High chemical resistance

Filmic Facestocks & Properties



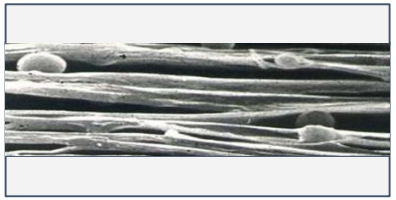


Filmic Facestocks: Appearance

PP/PE Clear

PP/PE Solid White

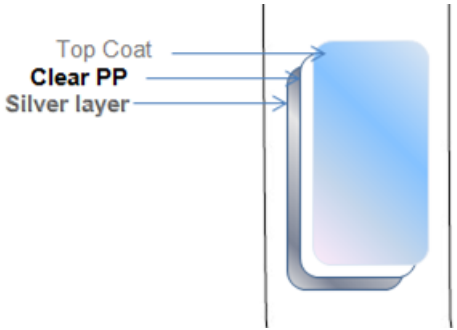
PP Cavitated White



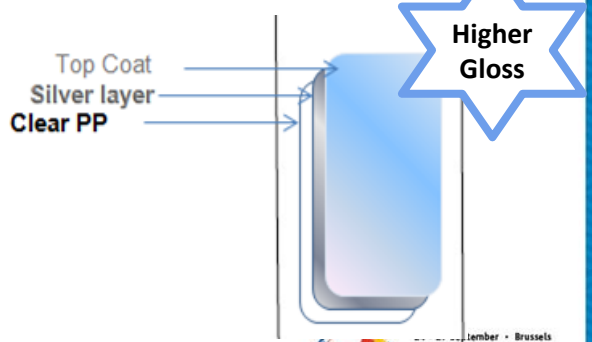
Air trapped in the core layer scatters light creating white pearlescent look

PP/PE Top silver

PP: Silver layer at top or on adhesive side
PE: Silver layer only at top



OR



Film Surface Treatments - Ink anchorage

Corona Treatment
Increase in surface energy (dyne level) by exposing the surface to a high voltage discharge (corona). → Ionization of air.

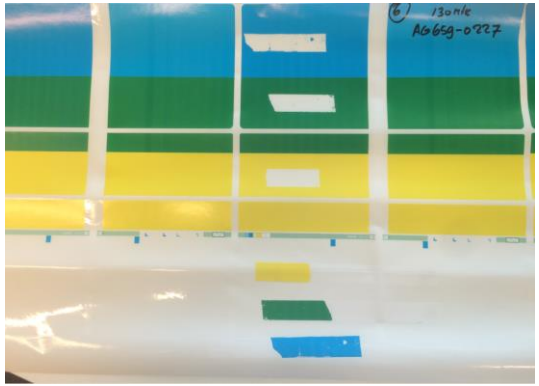
Plasma treatment
Upcoming technology - ionization of a gas.

Source: Vetaphone.com

Topcoating
A chemical top coating applied to the film surface to improve ink and toner anchorage.

Various types available for different printing techniques.

- Conventional Topcoats
- Digital printing topcoats



Ink anchorage - tape test

When to Choose Filmic over Paper Labels?

Film

1. **Clear labels** (“no label look”)
2. **Flexibility, conformability & tear resistance**
3. **Water and moisture** resistance
4. **Durability** to UV, heat, chemical, abrasion

1. In general higher cost
2. Printing: surface treatment or top coating required

Paper

1. Wider variety of facestock options
2. In general lower cost
3. More friendly to various printing technologies

1. May wrinkle
2. Lower tear resistance
3. No water resistance
4. Lower durability

Applications - Polyethylene & semi-conformable

Standard PE	Semi-conformable	Thin PE	Thick PE	Thermal Transfer PE
85 µm	50-65 µm	30-60 µm	100-120 µm	

Home Care
Home Detergents

Food & Personal care
Squeezable packaging

Food
Fruit Labels

Petrochemicals
Lubricants packaging

Petrochemicals
Drum labelling

Applications - Rigid Polypropylene

Standard PP

50-60 µm

Beer & Beverage
Glass & PET bottles

Food
Glass Jars,
PET Trays

Thin PP

20-40 µm

Pharma
Syringes, Injectors

HPC
Rigid Label
Reclosure

Thick PP

100-120 µm

Wine & Spirits
Ice-Bucket proof

Direct Thermal PP

Food
VI labelling for
fresh food

Sustainability: Future Filmic Labels

Increased Focus on Sustainability - Plastics

1. **Government legislation** and controls increasing.

2. End users increase expectation for sustainable packaging — **Reusability** and **Recyclability**

3. **Consumer demand** for sustainable packaging increases.

Labels Reducing Environmental Impact

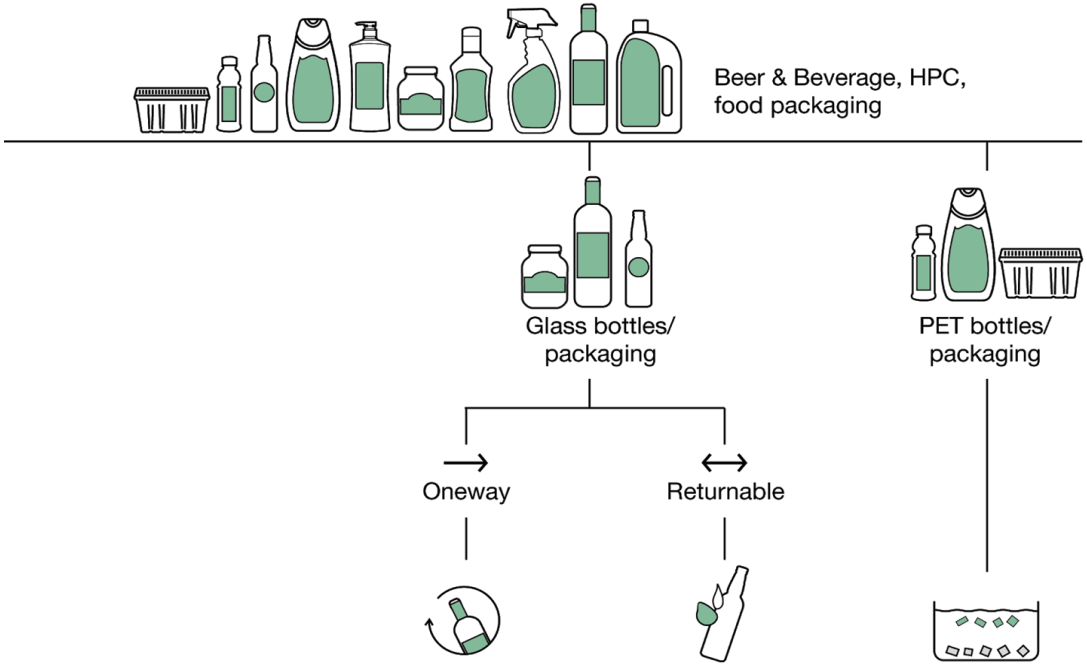
Recycled content
Give a second life to what we have already used.
- Facestock & Liners with recycled content

Reduce
Use less material to help conserve limited natural resources.
- Thinner facestock & Liners

Enable recycling
Make your packaging recyclable. What we use can be used again.
- Labels that can be easily separated in recycling process

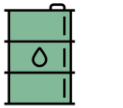
Responsibly sourced
Filmic facestock made from renewable and bio-based sources.
- Bio-based plastics

Circular Economy:
Labels enabling recycling & reuse of packaging



Circular Economy via Recycled Content

Savings - PET liner with Recycled content



Reduce consumption of fossil materials with 30%

Reduce greenhouses gases by 14%

Reduce the water usage up to 5%

Reduce energy usage up to 11%

* rPET liner with 30% recycled content.
Data Source: Avery Dennison Greenprint™ Methodology – a product life cycle assessment (LCA) methodology.

Summary

- The **main types** of filmic PSA labels are PP (rigid), PE (conformable), Co-extrusion (semi-conformable). Filmic facestocks like PET and PVC are being used for special applications.
- A **surface treatment** is always required for proper ink anchorage.
- Filmic facestocks have better **flexibility, conformability, tear resistance** and higher **water** resistance and **durability** to UV, heat, chemical, abrasion than paper labels.
- Filmic labels are being used in a wide variety of applications from HPC to pharma.
- With an Increased **focus on sustainability** in packaging industry, the following **4 principles** are seen in the industry:
  - **recycled content,**
  - **reduction** in thickness and/or weight
  - PSA labels **enabling recycling** of the packaging
  - PSA labels which are **responsibly sourced**.
- There are many filmic PSA solutions **commercially available** fulfilling the sustainability principles.