Identification and characteristics of self-adhesive materials

- Uses and applications
- Identification of samples
- Testing printability

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Label Stock Material

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Label Stock Material

- Pressure Sensitive Material create a bond with the substrate with a slight pressure which ensures that the material & the substrate have come in complete contact with each other.

- Unlike other label systems like Wet Glue, Shrink Sleeves, In mould labels, etc which require additional force to be applied like heat, water, etc.

- This leaves an advantage for Label Stock Material to have a clean room environment.

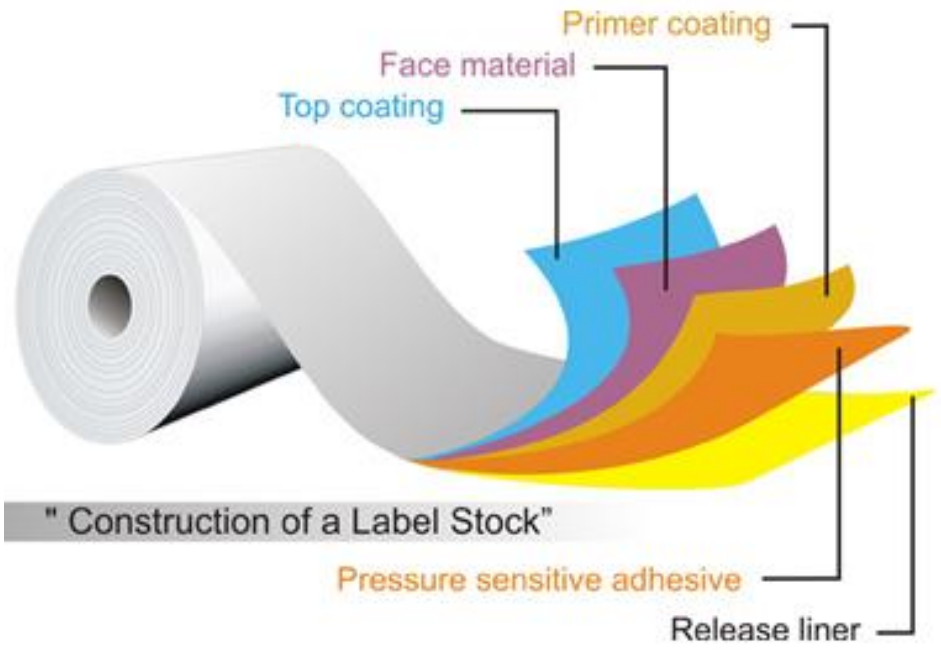
Label Stock Material

- Due to its wide range of face materials Label Stock Material is able to give various different kind of label finishes, label application, etc.

- Due to its wide range of adhesive label stock material is able to adapt to various challenges like application temperature, service temperature, storage & service atmosphere, etc.

- Due to a wide range of release liners & chemical composition, the material is able to adapt to various kind of Dispensing methods like manual application, automatic dispensing, automatic high speed dispensing, etc.

Layers of Label Stock Material



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Criteria For Choosing Face Material

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Type of Printing Method

Thermal Printing

Digital Printing

Flexo Printing

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Finish Required of the Label

Opaque

Clear

Metalised

Matte

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Performance Requirements of label (Paper Vs Film)

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Curved Diameter of the Container & Label Size Correlation with Face Stiffness

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Criteria For Choosing Face Material

- Type of Printing
- Finish Required of the Label
- Type of Performance requirement of a label (Paper or Film)
- Curved Diameter of the container & Label Size Correlation with Face Stiffness.
- Properties of Face Materials like Bulk & Strength

Tests Conducted On Face Material

Paper

- Face GSM
- Cobb
- Thickness of Face Material
- Stiffness
- Roughness
- Opacity
- Gloss/Matt
- Brightness
- Whiteness
- Shade
- Tensile Strength
- OBA

Film

- Face GSM
- Thickness of Face Material
- Stiffness
- Gloss/Matt
- Brightness
- Whiteness
- Shade
- Tensile Strength

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Types of paper used as Face Material

Uncoated Paper

Plain paper based on pulp fibres with a skinny layer on top to support better printing on a paper machine.

The paper is very porous and penetration of inks is very fast.

It is mostly used for Blank labels and printing is mostly by Thermal transfer ribbons for barcode.

One or two color printing is done for brand identification as the rough uncoated paper does not give a sharp image.

UNCOATED SUBSTRATE

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Types of paper used as Face Material

Semi Gloss Paper

2-3 layers of coating is done on the pulp fibres on a paper machine, which flattens out the uneven surface of the base paper

The coating is whiter than the base paper and calendaring imparts gloss on the face

This also reduces the penetration of ink and gives rise to sharp print images.

Semi gloss paper is largely used for Product labels and can also be used as blank labels and barcodes are printed using thermal transfer ribbons

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Types of paper used as Face Material

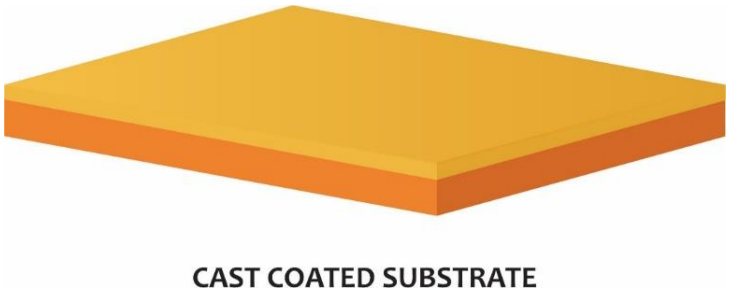
Cast Coated Paper

Laying a very thick layer of coating with high calendering results in a stiff paper with very smooth finish and High Gloss Finish.

The ink deposited remains on the surface resulting in excellent printability and high gloss.

The stiffness supports embossing

Due to it's high quality printing it is typically used product labels in cosmetic & liquor industry.



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Types of paper used as Face Material

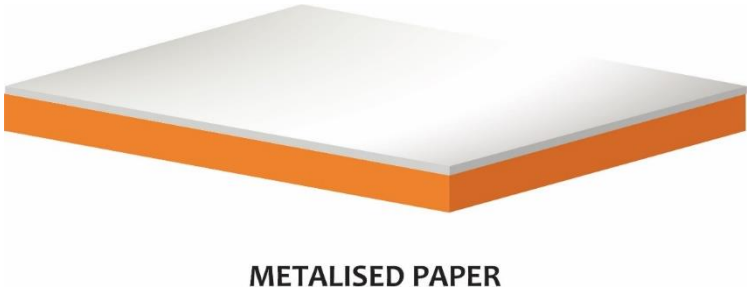
Metallized Paper

Semi Gloss or cast coated papers are Metalised by a deposition of vaporised aluminium.

This is done either as direct Metalising or transfer Metalising

The Metalised paper is Silver in shade and can be lacquered to produce different hues of Metalised paper.

The high gloss and rich feel of the paper is largely used in high valued products of the cosmetic and liquor industry.



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Types of paper used as Face Material

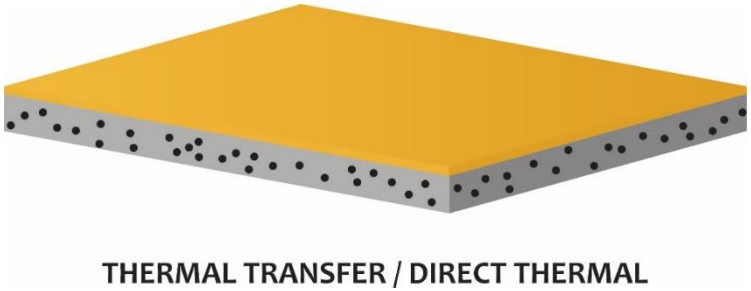
Direct Thermal Paper

A heat sensitive layer is coated on the paper. This coating turns black on exposure to heat.

Non top coated Thermal paper are without a layer on top and is used for economic solutions.

2-3 layers may be coated to support better resistance to heat and chemicals to produce Top coated Thermal papers with high shelf life.

The printing is done using thermal printers which impinge heat as per Requirement to produce Barcodes and normal written matter.



THERMAL TRANSFER / DIRECT THERMAL

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Types of films used as Face Material

- PE – Polyethylene
- PP –Polypropylene
- PET – Polyester
- PVC – Poly Vinyl Chloride

Types of films used as Face Material

PE – Polyethylene are used in flexible & Squeezable Applications

Advantages :-

1. Superior Flexibility
2. Resistance to Abrasion
3. Resistance to Impact
4. Durability

Limitations:-

1. No Resistance to oxidising acids
2. Not 100% Clear
3. No resistance to chlorinated hydrocarbons
4. No resistance to harsh outdoor conditions
5. Calliper should be >70mic for safe dispensing.
6. Can be stretched & torn.

Available Finishes :-

1. Clear
2. White Opaque

General Applications like :- Liquid Soaps, Gels, Shampoos, Face Cream, etc

Identifying the Film

To identify, separate the laminate & stretch the film. It will deform.

Also PE film like PP & Coextruded films floats in water.

Types of films used as Face Material

- PP – Polypropylene are slightly stiff in nature & hence are suitable for slightly large or mid-sized labels.

Advantages :-

1. Resistance to tearing
2. Resistance to abrasion
3. Resistance to chemicals
4. Die cutting
5. Printability
6. Good film flatness
7. Economical
8. Good Outdoor UV Stability
9. Clear film is used for No look Label

Limitations:-

1. Less resistance to heat

Available Finishes :-

1. Clear
2. White Opaque (both in Matt & Glossy)
3. Metalised

General Applications like :- FMCG, Cosmetics, Lubricants Oils,etc

Identifying the Film

To identify, separate the laminate & create a notch at the side of the film. On pulling it apart, the film will tear away smoothly.

Also PP film like PE & Coextruded films floats in water.

Types of films used as Face Material

- PET – Polyester highly stiff in nature & hence are suitable for large size labels. To improve flexibility 1 mil films are also used.

Advantages :-

1. Resistance to heat
2. Resistance to tearing
3. Resistance to abrasion
4. Resistance to chemicals
5. Excellent Dimensional Stability
6. Resistance to UV
7. Excellent for outdoor applications
8. Resistance to Solvents

Limitations:-

1. Less Conformability
2. Higher cost than other films

Available Finishes :-

1. Clear
2. Metalised Opaque (both in Matt & Glossy)
3. White Opaque

General Applications like :-

PET 1 Mil small size labels like Pen, Pharma Labels, Durables etc

PET 2 Mil Large size labels like hair oils, logistics,etc.

Identifying the Film

To identify, separate the laminate & create a notch at the side of the film. On pulling it apart, the film will tear away roughly & the edge will have a fibre like appearance/rough edges around the torn area.

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Types of films used as Face Material

- PVC – Poly Vinyl Chloride

Advantages :-

1. Durable, indoor & outdoor use
2. Very flexible, semi rigid, opaque
3. Relatively easy to convert
4. Corona treatment or top coating not required.

Limitations:-

1. Undesirable for environment
2. Forms toxins when incinerated
3. Plasticiser migration to adhesive or print surface
4. Leads to degradation of adhesive strength & primer
5. Relatively high cost

General Applications like :-

Outdoor advertising, battery labels, etc

Identifying the Film

To identify, separate the laminate & stretch the film. It will tear.

Requirements for printing on films

Corona Treatment

38 to 42 dynes is usually required for achieving good ink anchorage in printing.

On line corona treatment is required for best results

An over treatment of film, will cause print to washout or anchorage issues.

Top Coating

A chemical top coating can be applied to the surface to improve ink & toner anchorage.

These top coatings can be of various types available for different type of inks used in Press printing, Laser Printing, Digital, etc.

Certain top coatings can be done online at the time of printing.

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Sample Book

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Selecting the Right Product

- Bond Required – Permanent or Removable
- Shape of the Product – Circular, Flat, etc
- Size of the label
- Texture of the substrate - rough, smooth, porous,etc
- Chemical composition of substrate – Glass, HDPE, LDPE, Corrugated
- Surface Tension of the substrate
- Printing & converting Requirements
- Finish Required of the label
- Application Temperature
- Service Temperature

Selecting the Right Product

- Economics Required of the Label

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Question & Answer Session

Thank You

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