

## MATERIAL GUIDE

We do not sell raw materials listed below. This is provided as a guide to materials that we may use to construct products for our customers.

- [Over laminates](#)
- [Facestocks](#)
- [Substrates - Paper & Tags](#)
- [Substrates - Plastic Grades](#)
- [Surface Treatments](#)

### OVERLAMINATES

- **1 mil polyester, computer imprintable:** A matte coated film ideal for writing or printing upon. A good choice for ID cards requiring a signature, for dot matrix printed tractor feed labels, and for other labels where on demand imprinting is required. It is more expensive than matte polyester. The matte coating may impede the scan-ability of high-density bar codes.
- **1 mil polyester, clear:** Clear biaxially oriented polyester. It has excellent clarity, resistant to UV light, excellent chemical, abrasion, scuff, and acid resistance. Inert to most mild chemicals. Good heat resistance.
- **1 mil polyester, matte:** Same properties as clear polyester. May be preferred where the glare of a clear film impedes scan-ability or gives a less desirable appearance.
- **1 mil polyester, transparent black:** 1 mil high-temperature polyester. For security labels where the bar code is not visible to the eye but can be scanned by an infrared scanner. Also resists solvent such as jet fuel, MEK, and brake fluid. More expensive than other over laminating polyesters.
- **1 mil polypropylene, clear:** A clear bi-axially oriented polypropylene (BOPP). Good clarity, resistant to UV light, excellent chemical and abrasion resistance, smooth surface. Reasonable scuff resistance. Superior acid resistance. Inert to most mild chemicals. Fair heat resistance. Softer and more flexible than polyester, a benefit when applied on a curved surface. Used for document tracking and library labels.
- **1 mil polypropylene, matte:** A matte bi-axially oriented polypropylene (BOPP). Excellent clarity, resistant to UV light, excellent chemical and abrasion resistance, smooth surface.

### FACESTOCKS

An extensive range of film and paper material can be used as facestocks. Choosing a specific material depends on the application requirements, such as computer printing requirements, stiffness or conformability requirements, chemical or temperature resistance, and dimensional stability.

- **Bi-axially oriented polypropylene (BOPP):** An ultra clear semi conformable, top-coated film having exceptional thermal transfer printing qualities. Available in .5 mil to 3 mil grades. Not recommended for exposure to solvents.
- **C1S semi gloss:** A coated one-side lightweight clay coated super calendared paper stock. There are a variety of paperweights available including 45#, 50#, and 60#. There are a variety of grades available from economy (lower brightness, lower coating, cream white shade) to superior (high brightness, superior coating for higher quality print image, higher moisture resistance, and blue white shade). Heavier weight grades have greater strength.

- **C1S gloss:** A coated one-side, high gloss paper stock. Superior grades typically result in printed areas having higher gloss appearance than the stock itself.
- **C1S cast coated:** A coated one-side high gloss paper stock. The cast coated refers to a paper manufacturing process in which the gloss is created on a cast cylinder. Ink printed on this sheet has the same gloss factor as the sheet itself. Smudge resistant characteristics are available for imprinting bar code and other variable data.
- **C1S matte:** A high quality, coated paper with a dull finish.
- **C1S gloss, grease repellent:** A gloss label paper for applications where resistance against grease is required.
- **Dairy label:** A coated one-side semi-gloss flexible facestock with medium gloss and excellent wick resistance.
- **Destructible vinyl:** A matte white film designed specifically for security label applications such as fixed asset labels, rental/warranty labels, serialized products, security precautions, and pharmaceutical products. Depending on the design, it may be difficult to die cut. It is compatible with direct thermal, thermal transfer, laser, and dot matrix printers.
- **EDP:** A bright white uncoated bleached kraft stock having good smudge resistance and ink receptivity. It is suitable for ballpoint, impact, dot matrix, and continuous laser printers.
- **Fluorescent:** A 60# matte coated litho stock accepts printing inks. Available in red, orange, green, chartreuse, and pink colors. Laser versions are available.
- **Ink jet:** An uncoated bright white sheet with good print quality and absorption/ink drying characteristics. Most ink jet facestocks are suitable for monochrome ink jet printers. Specialty coated ink jet papers are recommended for color and photographic printing.
- **Laser:** A smooth uncoated paper designed to provide superior imaging and toner anchorage. Designed for processing through most low and high-speed laser printers. Available in 40#, 45#, 50#, and 60# weights.
- **Laser, C1S semi gloss:** A coated one-side semi gloss paper having toner anchorage characteristics. Designed for processing through most low and high-speed laser printers.
- **Laser C1S latex:** A smudge proof latex paper providing excellent toner anchorage and resistance to cleaning solutions. Ideal for drug testing and shelf marking applications. Designed to process through most medium and high-speed sheet fed laser printers.
- **Laser, C1S matte:** A 60# paper stock coated one-side with a dull matte finish. The surface provides good toner anchorage and the high opacity provides a good base for OCR and bar code printing.
- **Latex:** A latex impregnated, clay coated paper. Impregnating paper with latex provides high flexibility and conformability, internal strength, and moisture resistance. Fair printing characteristics. Smudge proof versions available for handwriting and computer printing applications.
- **Luminescent:** An 85# coated one-side green-tinted facestock having exceptional luminescent qualities under minimal lighting.
- **Metalized:** A vacuum metalized surface modified with an acrylic top coating, applied to paper or film (C1S, polyester, BOPP, etc).
- **Polyester, clear:** A highly transparent film having excellent tear strength, heat resistance, dimensional stability and chemical resistance.
- **Polyester, chrome:** A coated metallic film featuring excellent tear strength, heat resistance, dimensional stability, opacity and chemical resistance. Available with a matte, bright, or brushed finish. Suitable for thermal transfer printing applications.

- **Polyester, computer printable:** White or translucent, matte coated polyester film having heat stable characteristics for use in laser and thermal transfer printers.
- **Polyester, metalized:** A polyester based film metalized to impart a brilliant silver luster.
- **Polyester, white:** a white facestock featuring excellent tear strength, heat resistance, dimensional stability, opacity and chemical resistance. Suitable for thermal transfer printing applications.
- **Polystyrene:** An opaque, rubber modified surface treated film with stiffness allowing for easy dispensing and designed for prime label applications. Not recommended for outdoor use.
- **Polyimide:** A high performance 1 or 2 mil top coated white or tan film having excellent tear strength, heat resistance, dimensional stability, and chemical resistance. Designed for applications requiring durable printing, high temperature performance and resistance to corrosive solvents. This product withstands soldering temperatures and cleaning solvents involved in PC board production. Designed specifically with the electronics industry and harsh environments in mind. Applications: electronic manufacturing, circuit board manufacturing (where temperatures can reach 500F), harsh environments. Thermal transfer printable. Performance range up to 700F.
- **Prism:** A micro-embossed metalized paper with a two-dimensional holographic diffraction pattern.
- **Retro-reflective polyester:** A polyester material embedded with glass beads designed to reflect light back to its source. Recommended for applications requiring extremely high contrast when scanning long distances. Dot Matrix and thermal transfer printers. Applications: long-range scanning such as identifying warehouse location, marking of totes, bins and racks. Can double to triple the scannable distance of a bar code.
- **Silverback:** A reverse coated aluminum foil laminated to an uncoated paper base stock. The thin foil forms a barrier for maximum resistance and durability and ultimate opacity.
- **Tamper evident polyester:** A white or silver polyester self-destructive film, which cannot be removed from a surface without leaving a void pattern. Applications: asset tracking, data security, document control, inventory tracking, warranty tracking, product nameplates. Fixed assets, rental/warranty, product nameplate and serialization, security precautions, pharmaceutical. Print technology: direct thermal, thermal transfer, laser, and dot matrix.
- **Thermal, medium sensitivity:** A top coated medium sensitivity thermal coating for use in standard speed thermal printers. Used in a variety of bar code applications for industrial and retail. Available with heat resistance characteristics where applications are exposed to heat lamps and food warming systems. Available in paper, tag, and film stocks. Coating is available in low and high sensitivity levels as well.
- **Thermal, high sensitivity:** For use in high-speed thermal printers. High sensitivity grades work well in low voltage print heads (minimizing print head wear). Available in paper and tag stock.
- **Thermal IR:** A smooth, white facestock with high sensitivity IR scannable top coating, capable of being scanned with an infrared light source. Excellent resistance to direct water exposure. Superior resistance to heat and humidity.
- **Thermal red:** A smooth red fluorescent coated paper with a medium sensitivity thermal coating.
- **Thermal NIR:** A bright white paper with a medium sensitivity thermal coating designed for used with scanners in the 675 nm light range. Infra red scannable coating is also available.
- **Thermal OL:** A medium sensitivity thermal paper over-laminated to provide exceptional resistance to chemicals, solvents, abrasion and other harsh environmental conditions.

- **Thermal transfer:** An ultra-smooth paper stock providing premium bar code printing characteristics. Available in uncoated, single coated and double coated grades. Also available in piggyback. Selective new coated grades provide less print head wear.
- **Thermal transfer board:** A 10 pt thermal transfer label stock for high rigidity labels.
- **Tire label:** A latex impregnated paper with a barrier coating on the adhesive side of the facestock.
- **Type:** An opaque, white, spun-bonded olefin flash spun from high-density polyethylene. Small diameter fibrils created in the flash spinning process are thermally bonded by heat and pressure. This is a very tough, durable material that is good for rugged conditions including water, chemicals, and weather environments where good tensile and tear strength is required.
- **UL litho:** A highly destructible clay coated paper having easy tear characteristics. Good toner and impact printing characteristics. Not recommended for use with toner-based printers.
- **Valeron:** An oriented, cross-laminated film offering outstanding strength, elongation and tear resistance.
- **Vinyl, flexible:** A white pliable vinyl having good tear strength and weather resistance, but low heat resistance. It is available either non-top-coated or top-coated for computer printability. Care must be taken in adhesive selection to ensure good dimensional stability.
- **Vinyl, semi-rigid:** A white vinyl having greater rigidity, heat resistance, and dimensional stability than flexible vinyl, but having lower tear strength. Weather resistance is also good. Computer printable grades available. Used in drum label applications.
- **Wet strength:** A bright white clay coated paper with a matte finish having additional wet strength characteristics for improved moisture resistance. Typically 60#.

#### NON ADHESIVE SUBSTRATES - PAPER AND TAGS

- **Tag - 100#, 125#, 175#, 200#:** A smooth, high-density paperboard having excellent stiffness and printing characteristics.
- **7PT return card:** A low density bleached white kraft paper meeting USPS requirement for document thickness.
- **8-14PT C1S:** Medium weight grades of coated one-side cover also employ double coating on one side. Super white appearance adds brilliance to any printing process. Also available in low - density grades.
- **8-14PT C2S:** Economic, double coated two-side board grades providing a high quality surface for two sided printing and converting. They also have good stiffness so they score, fold, die cut and emboss cleanly. Also available in low-density grades.
- **7.5-10 PT thermal transfer tag:** A bright white coated grade for superior thermal transfer printability and outstanding graphic reproduction. The best grades are back-coated to reduce curl. Usually available in matte finish to minimize reflectance problems with bar code scanning. Semi-gloss grades are available.
- **Composite layered:** A patented outdoor-durable, highly tear-resistant, laser-printable laminated tag. A unique construction incorporating a proprietary outdoor durable laser paper laminated to both sides of a Valeron core. An excellent selection for laser imprinting ID/Membership cards, law tags, steel tags, outdoor signage and other applications requiring a durable, strong, laser printable material.
- **Water-oil-grease resistant (WOGR):** A very durable, latex saturated, coated tag resistant to water and grease. It has a good printing surface that resists soiling. Complies with FDA regulations for use with food contact.

## NON ADHESIVE SUBSTRATES - PLASTIC GRADES

- **Fiber reinforced latex tag:** A tag saturated with latex and reinforced with fiber having high edge and internal tear resistance. It is washable, launderable, sewable, and weather resistant. Suitable for garment, pillow, upholstery, automotive, and nursery applications.
- **Kimdura:** A multi-layer bi-axially oriented filled polypropylene. UV resistance/Outdoor use: up to 1 year. Service temperature range: -20F to 180F. Not approved by FDA for direct or indirect food contact. Strengths: Best surface uniformity and printability. High opacity (98) for 2-side printing. Weaknesses: Becomes brittle at sub zero temperatures.
  - Coated grades are available in C1S 8 mil and 10 mil. Printability Excellent on 4 color process, thermal transfer, cold fusion, and dot matrix; good on ion deposition and ball point; damages laser and other hot-fusion printers. Cost scale: 86/100.
  - Uncoated grades are available in 8 mil and 10 mil. Printability: Excellent on 4 color process; good on cold fusion and dot matrix printers, fair on ballpoint; poor on ion deposition; damages laser and other heat fusion printers. Applications: Outdoor tags, chemical tags, hang tags, menus medical charts; coated grades suitable for thermal transfer tags, wrist bands, tree & nursery tags, long term outdoor applications.? Cost scale: 57/100.
- **Nomex (A registered trademark of DuPont):** Available in 5 mil and 7 mil uncoated grades. A superior grade for heat resistance. Applications: tags for metal processing. Can be flexographic, letter press printed, and thermal transfer printed.
- **Polyolefin, C2S matte:** Available in 6, 8, and 10 mil grades. Service temperature range: -20F to 185F. UV resistance/outdoor use up to 1 year. FDA approved for indirect food contact. High opacity (90). Printability: Excellent for 4 color process, cold fusion and dot matrix printers. Good for ballpoint, thermal transfer, and ion deposition. Damages laser and other heat fusion printers. Applications: turkey tags, key tags, ID cards, tree and nursery tags, shelf talkers, produce tags. Cost Scale: 43/100
- **Polyethylene, high density (HDPE) or low density (LDPE):** A single layer blown film. Service temperature range: -70F - 200F. UV resistance/outdoor use: 1 year. High tear strength.
  - Uncoated: Available in 7.5 mil and 10 mil. Printability: Good for line art, marginal for ion deposition, poor for cold fusion, dot matrix, and ballpoint. Damages laser and other heat fusion printers. 2-sided printing is marginal due to lower opacity (70). FDA approved for direct food contact. Applications: lumber tags, log tags, tree & nursery tags, meat and cheese insert labels, brick tags. Very economical film. Cost Scale 7/100.
  - Clay Coated: Available in 4.5 mil C1S, 7.5 mil C2S and 10 mil C2S. Marginal 2- sided printing due to lower opacity (74). Printability: Excellent on thermal transfer, good on line art, ion deposition and ball point, fair on 4 color process, poor on dot matrix. Damages laser and other heat fusion printers. Applications: thermal transfer outdoor tags, price tags, bad headers, Unit/Load tags, wrist bands. Economical film. Cost scale: 29/100.
- **Polypropylene, talc filled (Calcium Carbonate Reinforced):** A single layer filled polypropylene film. Service temperature range: -4F - 150F. UV resistance/outdoor use: poor. Available in 6 mil, 8 mil, and 10 mil grades. Printability: Good for line art, four color process, ballpoint, and dot matrix, fair in thermal transfer printers. Damages laser printers. Advantages: a low cost film. Weaknesses: short term outdoor life, yellows under UV light exposure, less strength than other films. Cost scale: 14/100.
- **Polyolith:** A matte white BCDC film suitable for a wide range of applications where durability, strength, moisture and chemical resistance, and superb printability are required. FDA compliant for direct food contact. Can be used for outdoor use for up to one month.

- **Teslin:** A single layer highly filled micro porous polyolefin. Available in 8mil and 10 mil grades. UV resistance/outdoor use is very poor. Advantages: Excellent print quality. Good opacity (94). Weaknesses: high stretch and poor tear resistance. Printability: Excellent for 4 color process, thermal transfer, ball point, good for line art, poor for ion deposition and dot matrix. Some grades are good for laser printers. Applications: hunting licenses, CF manifold tags, temporary ID cards, automotive tags, outdoor use maps. Cost scale: 64/100.
- **Tyvek:** A spun-bonded olefin flash spun from high-density polyethylene. Small diameter fibrils created in the flash spinning process are thermally bonded by heat and pressure to provide a very tough, durable material structure that is good for rugged conditions of water, chemicals, and weather where you need good tensile and tear strength. Service temperature range: -100F - 175F. UV resistance/outdoor use: 1-3 months. Uncoated and coated grades approved for indirect food contact. High strength characteristics (difficult to punch). Lighter weight than paper. Applications: industrial tags, hang tags, law tags, hunting licenses, wristbands, steel tags, Christmas tree tags, ski tags. Coated grades provide better graphics.
- **Valeron (A registered Trademark of Van Leer):** Valeron is a multi-layer, cross directionally laminated construction of high-density polyethylene providing incredible strength and durability. Its unique composition maintains structural integrity even when nicked or punctured. Service range is -70F to 200F. UV resistance/outdoor use: up to 1 year. It is the ultimate in tear strength.
- **Vinyl, computer imprintable:** Rigid calendared vinyl, available in 10 mil C2S matte. Service temperature range: -4F - 150F. UV resistance/outdoor use: poor. Printability: Excellent for cold fusion and dot matrix printers, good for ball point, line art, 4 color process, and ion deposition, fair on thermal transfer. Damages laser and other heat fusion printers. Advantages: provides rigidity without the need to use heavy over-laminates. Weaknesses: inherent curl due to rigidity of film. Applications: temporary ID cards, door hangers. Cost scale: 7/100.

#### **SURFACE TREATMENTS**

- **Corona-treated:** Surface treatment designed to enhance printability with UV, letterpress, and most flexographic inks.
- **Computer printable matte:** A matte, computer-imprintable topcoat for computer ribbon inks and toner based printers. Accepts most flexographic film inks. Excellent smudge and abrasion resistance. Suitable for outdoor use.