Western States Envelope & Label

Resource Guide

Creating the Perfect Label

How do you create the perfect label? You partner with **Western States Envelope & Label** – a company that since 1908 has provided exceptional quality envelopes and labels to printers and distributors around the globe.

Satisfied customers have always been our focus. We've learned from experience that the path to success and happy customers centers on getting the job done right the first time around. We know that working together with our customer during the creative process is the key.

In order to enhance this creative process, we've produced this in-depth Resource Guide. It provides you with the basic principles and tools needed to engineer your labels accurately. This knowledge base will enable you to have greater impact and input into the collaborative effort of creating your labels with **Western States**. We feel this partnership is the basis of creating an exceptional product.

We look forward to working with you and applying these guidelines as we design the perfect label to fit your customers' every need.


Jewel
Chef's Kitchen
COLD FRIED CHICKEN
Chicken (containing water, salt, sodium phosphate)
Keep Refrigerated
DAVENPORT
Ludmila
HARPER'S
BAGEL & BAKE SHOP, INC.
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CHEESE
SAUSAGE
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PEPP. & MUSHROOM
SAUS. & MUSHROOM
SAUS. / PEPP. / MUSHROOM
SAUS. / GR. PEPPER / ONION
WORKS
VEGETARIAN
OTHER

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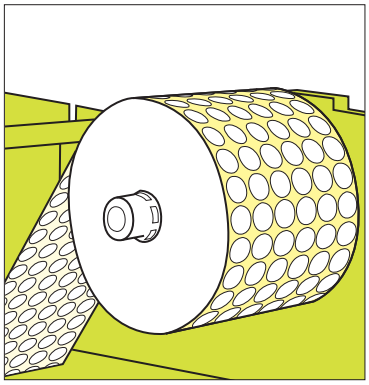


Pressure Sensitive Labels

What Are They?

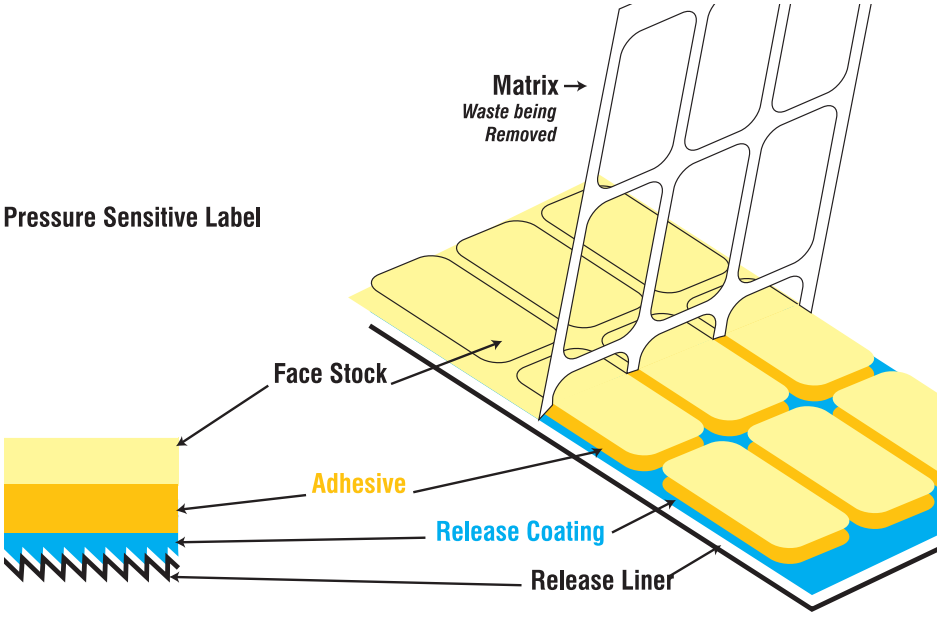
Labels that are permanently tacky and bond to surfaces with a minimum of pressure are called pressure sensitive or self-adhesive labels.

These labels offer benefits over wet glued, heat-seal or water remoistened labels. The key benefit is the ability to bond to a wide array of surfaces such as plastic and corrugated containers and packaging films. They are also simple and convenient to use and require minimal machine modification, preparation or cleanup.

It's called "pressure sensitive" because all it takes is a little pressure to effect instant, all-over bonding. Unlike other types of labeling, pressure sensitive labels require absolutely no fasteners, glue, water or heat. To apply, just pull away the liner from the face stock...and press directly onto the item you are labeling. Result? Instant adhesion with only slight pressure.

Construction

1. **Face Stock** – is the surface material. It can be paper, foil, film or cloth-material that's designed to be printed and converted into pressure sensitive stock.
2. **Adhesive** – is designed as a coating layer to adhere to a wide variety of surfaces. An adhesive can be permanent or removable for long or short-term use.
3. **Release Coating** – is a special coating applied to a liner that regulates the correct adhesion release. The release level is a measure of the peel strength from a release liner.
4. **Release Liner** – protects the adhesive from contamination and is removed for simple application of the label.



How is the Label Used?

In the design or documentation stage, it is imperative to include information specific to the end use of the label. The conditions under which the label is expected to perform will determine what face material, adhesive, and liner will be selected to manufacture the label. Start every design phase by asking one simple question: **How will this label be used?**

Define the label's required performance with the application checklist below.

Machine Applied or Machine Imprinted – Begin by determining if the label will be machine applied or machine imprinted. If machine applied/imprinted, the following information is critical to meet the specifications of the application/imprinting equipment.

- ❑ Determine the width and length of the label on the roll. Get samples if possible (*see chart on page 7).*
- ❑ Determine if labels are outwound or inwound and the corresponding rewind number (*see chart on page 20).*
- ❑ What is the size of the core?
- ❑ What is the maximum outside diameter of a roll?
- ❑ What is the web width and gap between labels?
- ❑ What are the slitting and splicing tolerances?
- ❑ Are missing labels permitted?
- ❑ Is a leader required?

Barcode Label – If the label includes a barcode, these points should be addressed. *(See chart on page 21 for basic barcode types.)*

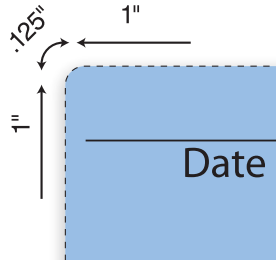
- ❑ What is the type of symbology being used?
- ❑ What are the number of characters per inch?
- ❑ What is the height of the barcode?
- ❑ Identify and specify the check digit if one needs to be included.

Intended Use/Performance – Whether your labels are hand or machine applied, their intended use, the substrate the label is applied to, and the environment all play an important role in it's performance. Use this checklist to help define your label needs:

- ❑ Are the labels imprinted? If so, how will they be imprinted? (*See page 12 for imprinting technology comparisons*.)
- ❑ Do the labels need to be permanent, removable or repositionable?
- ❑ What is the expected life span of the labels after application? Less than one year? One to three years? More than three years? Is the expected lifespan inside or outside?
- ❑ What surface will the label be applied to? Paper, metal, glass, wood, painted surfaces, corrugated box, plastic or shrink-wrap?
- ❑ What is the shape and texture of the application surface? Smooth, rough, cylindrical, flat, curved, flexible or pebbled? What condition is the surface? Wet, dirty, dusty, or oily?
- ❑ At what temperature will the labels be applied? Moderate temperature (40° to 80°), a freezer (less than 32°)? During the lifetime of the labels, what temperatures will they be exposed to? What is the temperature of the product at the time of application? Estimate the minimum and maximum temperatures.
- ❑ What harsh environments will the labels be exposed to? Will they be placed in ovens, freezers, or microwaves? Exposed to direct sunlight, chemical baths, abrasives, petroleum products or chemical solvents?

Label Characteristics

Dimensions – Begin the process with an accurate label drawing. The drawing should describe all the physical characteristics of what is being made. This should include, but is not limited to, the width, length and corner radius of the label and may also include the position and diameter of interior cuts, orientation to the roll, or sheet. (*Please see page 7 under "dimensions" for more detailed information.*)



Material – Carefully match requirements of label performance with known material performance characteristics. Some situations require testing to take place before materials can be chosen. (*Please see page 5 "application checklist" for more detailed information.*)

Copy – Write copy and design a layout for the words and images that will be printed on the label. If applicable, provide a number in the copy that can be referenced for future runs. The orientation of the copy to the label width, length and roll or sheet, is very important to the document. A PDF proof will be provided upon request. (*Please see page 7 for more detailed information.)*

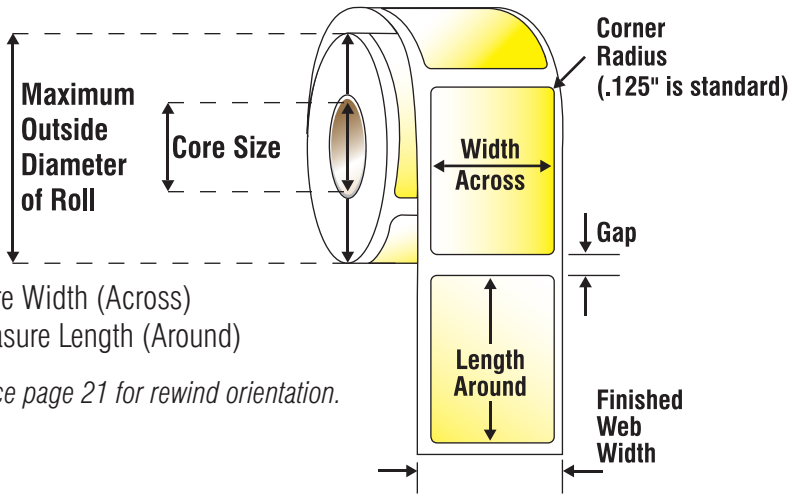
Colors and Color Breaks – Verify colors that will be used with the copy and any images you are including on the label. PMS charts are the most common tools for labels manufactured conventionally and printed flexographically. All PMS books have colors printed on coated and/or uncoated stock. When choosing colors, it is important to understand the background color of the material being used to print on. PMS colors will look different when printed on label stocks such as films, fluorescents, and foils. **Digital printing will not match PMS swatch books.** PMS charts are to be used to reference a spectrum of desired colors when printing digitally.

Protective Coatings – A protective coating is recommended if your label is exposed to chemicals, moisture, extreme temperatures, or frequent contact by human hands. Protective coatings cannot protect color fading due to extended sunlight exposure, nor do they protect paper labels from moisture or other extreme weather conditions. Types of Protective Coatings include:

- **UV Clear Coat** – When applied, this liquid coating gives your label a hard, glossy finish which helps resist fingerprints, surface moisture, and certain chemicals. Can be applied as a flood coat or over a selected portion if required.
- **Lamination** – A protective film that is fused to the labels. Lamination can provide a high gloss finish with peak resistance to handling, abrasions and chemicals.

Dimensions

Measuring a Label



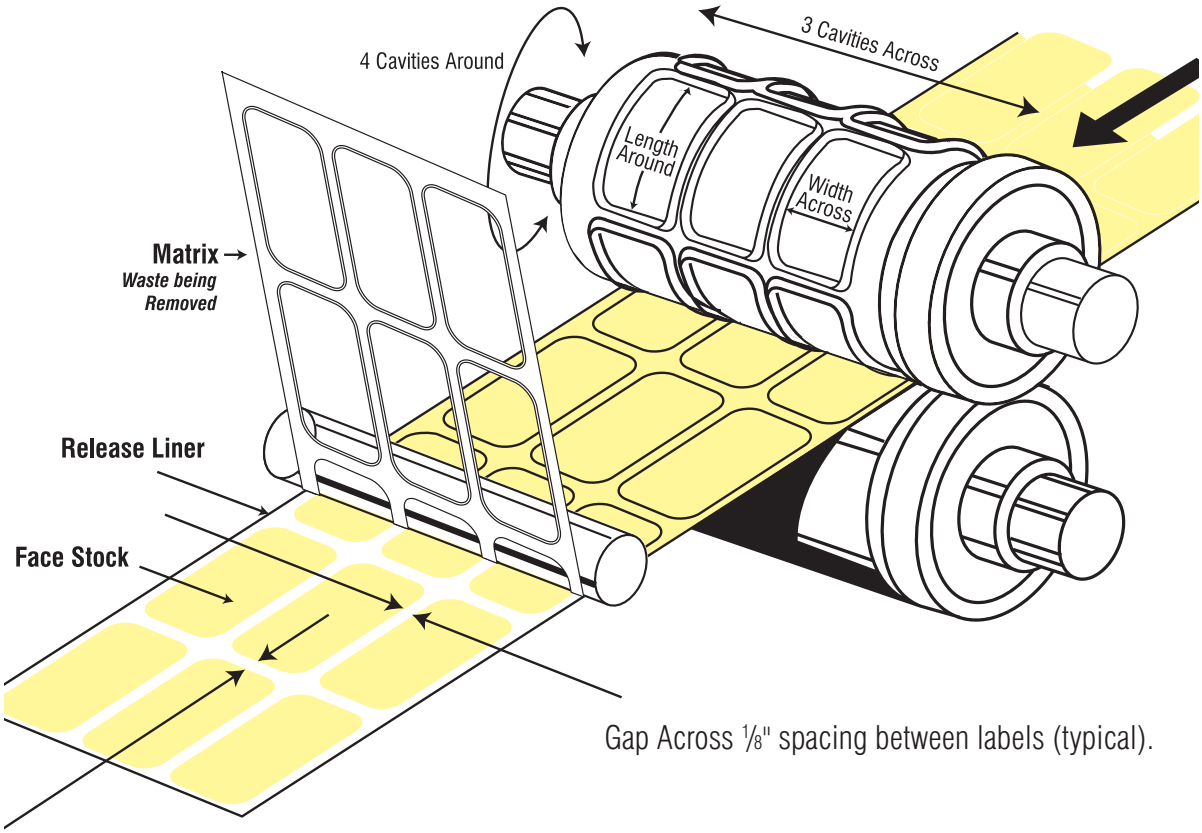
First: measure Width (Across)
Second: measure Length (Around)

Please reference page 21 for rewind orientation.

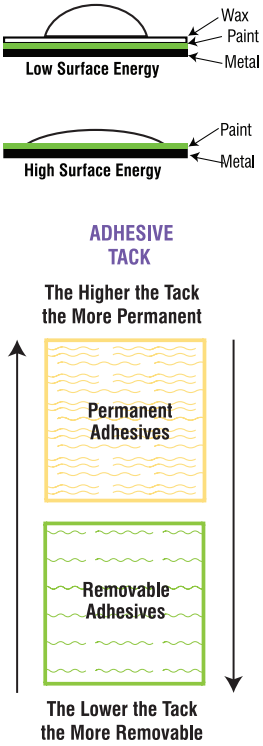
Label Die Close-up

An example of a typical die is shown below.
Label Production is more efficient when there are more cavities across the die.
Conversely, the more cavities the more costly to buy and maintain the die.

Please note: *The specifications for the gap between labels are made when the die is ordered. No adjustments to the die can be made after a die is manufactured.*



Adhesives for Pressure Sensitive Labels



Many people feel that a pressure sensitive label can be applied successfully to everything. Not true! There are some surfaces to which pressure sensitive labels will not adhere at all. The key to success in any label application is to test the face material and adhesive prior to the label order being placed. This simple process will prevent problems from occurring later. The performance of adhesives is dependent on three measurable factors:

Tack – Tack defines the degree to which an adhesive will stick to a surface on first contact. Tack allows an adhesive on a pressure sensitive label to "wet" a surface and form an appropriate bond. The tack increases on smooth or heated surfaces (high surface energy) and decreases on rough or cold surfaces (low surface energy). *See chart below.* Tack can be laboratory tested by measuring the amount of force needed to peel it away from a substrate.

Low tack – defines an adhesive which, all other conditions being equal, has a low initial grab.

High tack – defines an adhesive which, all other conditions being equal, has a high initial grab.

Adhesive performance is highly dependent on its contact with a surface–it should be applied with firm pressure on a dry surface that is free of contaminates.

Specific Adhesion – Specific adhesion is an adhesive's ability to stick/adhere to a surface after it has been allowed to fully set. A minimum of 24 hours, preferably 72, should be allowed for the adhesives to set before determining whether the product has the proper amount of adhesion. An adhesive may bond well to one surface such as glass, but poorly on another such as polyethylene. Adhesion qualities can be tested by measuring the amount of force needed to peel away the label from various surfaces under specific bonding and conditioning circumstances.

Cohesiveness – The internal strength of an adhesive is its cohesiveness. To prevent a label from splitting when removed from a surface, the cohesive strength has to be greater than the specific adhesion. One method of measuring the cohesive strength of a label adhesive is by vertically bonding a label sample to a test bar. A weight is then attached to the sample. The amount of time that elapses before the sample pulls free of the bar is a measure of shear strength.

High Surface Energy Substrates			Low Surface Energy Substrates
Metals	Plastics		
Copper	Kapton® (Polymide)	ABS	PVA (Polyvinyl Acetate)
Aluminum	Phenolic	Polycarbonate	Polystyrene
Zinc	Nylon	PVC (Polyvinyl Chloride)	Acetal
Tin	Alkyd Enamel	Noryl®	EVA (Ethylene Vinyl Acetate)
Lead	Polyester	Acrylic	Polyethylene
Stainless Steel	Epoxy Paint		Polypropylene
Glass	Polyurethane Paint	Polane® Paint	Tedlar®
			Teflon®
These values are provided as a guide. Modifications in formulations can substantially alter surface energies.			
Kapton®, Tedlar® and Teflon® are registered trademarks of Dupont. Noryl® is a registered trademark of General Electric. Polane® is a registered trademark of the Sherwin-Williams Company.			

Permanent or Removable?

The biggest decision up front is to decide if you need a permanent or removable label. Both types of labels are designed for application in temperatures roughly between 55° to room temperature.

Permanent Adhesives – Permanence in an adhesive is a combined function of the adhesive, face material, surface application, environment and time, and should be considered in the design and specification of a pressure sensitive label. A permanent label will have strong adhesion to a surface, usually the labels cannot be removed without damage to the label itself, or to the surface it's on. No adhesive is truly permanent – just less removable than others.

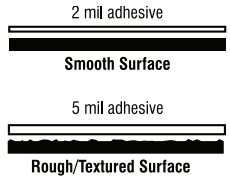
Removable Adhesives – A removable label requires adhesive and face material that will adhere to a substrate while remaining removable over a period of time. The period of use concept is important, since some adhesives considered removable may eventually become permanent. Depending on the surface to which the label is applied, some removable adhesives can build adhesion over time and may be difficult to remove in one piece, with minimal or zero residue. The rougher the surface, the easier the label will be removed, but the more difficult to adhere.

Acrylic and Rubber-Based Adhesives

Acrylic adhesives are primarily composed of synthetic polymers, which are inherently sensitive to pressure. Rubber-based adhesives are primarily composed of synthetic or natural rubber. Both adhesives have other components that can be added to modify the pressure sensitivity.

Characteristics of Acrylic and Rubber-Based Adhesives

	Acrylic	Rubber-Based
Tack	Low-Medium	High
Initial Adhesion	Low	High
Ultimate Adhesion	High	Medium
Clarity	Good-Excellent	Poor-Fair
Service Temperature	High	Medium-High depending on adhesive type
Durability	Excellent resistance to plasticizers in plasticised products such as some vinyls. Excellent resistance to most solvents	Poor resistance to plasticizers and to most common solvents such as gasoline, oil and other petro derivatives
Stability	Excellent stability over long periods of time, especially outdoors	Short-term outdoor use only
UV Resistance	Excellent	Poor
Cost	More costly if not of the emulsion class of adhesives	Economical



Adhesive Performance Factors

Successful adhesive performance depends on several adhesive performance factors:

Composition – The composition of the substrate the label will be applied to can have an effect on the ultimate strength of the bond that the label will obtain. Plastic substrates (Polyethylene, Polypropylene, etc.) are not readily compatible with straight acrylic based adhesives and consequently may not provide the destructibility of a rubber-based adhesive.

Texture – Pressure sensitive adhesives require good contact with the substrate surface to obtain adhesion. A rough textured substrate will reduce the amount of surface area the adhesive will be able to contact, reducing the level of adhesion. Rough corrugated boxes, pebbled plastic computer cases and wooden pallets are all examples of possible problem areas. Label materials with a heavier coating weight or a more aggressive adhesive are available to provide the required adhesion level.

Shape – The shape of the substrate, along with the size and stiffness of the label, must be considered to insure proper end use performance. Pressure sensitive adhesives require a short period to flow into the surface of the substrate and obtain maximum adhesion. If a stiff label is being applied to a curved surface, the stiffness or memory of the label may cause the label to lift from the substrate before the adhesive has had a chance to adhere to the surface. Rougher substrates will aggravate the situation. Typical solutions will be to use either a more aggressive adhesive or a more flexible label.

Cleanliness – The cleanliness of the surface of the substrate when the label is applied will affect the ultimate adhesion of the label and the success of the application. Contamination from dirt, oils, frost and other foreign elements prevent the adhesive from contacting the surface. Also, other contaminants present during the manufacturing of the substrate such as mold release agents on blow molded plastic products and plasticizers in vinyl products will affect the adhesion or reduce the life of the label through adhesive deterioration. All substrates should be clean and free of all contamination. In situations where contaminants are inherent in the manufacturing process, special adhesives may be available to overcome the problem.

Temperature at Application – The temperature of the substrate at the time the label will be applied can affect the ability of the label to adhere to the substrate. Pressure sensitive labels require the adhesive to flow into the pores of the substrate. If the temperature at the time of application is below the freezing point of the adhesive, the adhesive will lose its ability to grab the surface and will edge lift or fall off. Typical minimum application temperatures are between +40° to +50°. Special adhesives are available that will provide application temperatures down to -10° to -20°.

Environmental Conditions – Paper label materials are affected by moisture either through direct contact or through humidity in the air. Moisture can cause the paper to deteriorate resulting in a loss of print contrast and barcode scanning.

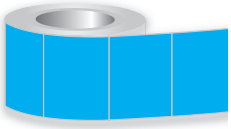
For label applications that require resistance to moisture, special materials are available for most printing technologies that will provide a range of durability. Materials include resin and latex impregnated papers for limited exposure, and vinyls, polyesters, and other plastics for maximum exposure. Many of the label materials can be over laminated with a clear polyester to increase the durability of not only the label but the printed image as well.

Expected Useful Life – The environment the label will be exposed to during its life will play a role in the selection of the appropriate label material. Applications that require resistance to grease and oils, as in labels for the automotive industry, may require either a latex impregnated paper or a vinyl label. Applications that expose the label to excessive levels of abrasion may require either a stronger paper or a plastic. Long term exposure to high heat (above 120°) will cause most label materials to deteriorate and may require a special product.

Thorough testing is always recommended to assure the correct label stock and adhesive selection.

Basics of Die-Cutting

There are many styles of dies available to manufacture labels depending on how they will be used and applied. Dies can be tooled to create styles such as square corners, round corners, circles, bursts, ovals, special shapes, individual sheets, etc.



Die-Cut Labels – Die-cut labels are the most common style of cutting labels. They can be a round corner rectangle, circle, oval, burst, or other special shape. A steel die with multiple cavities tooled to the size and shape of the die-cut is required. This die then cuts though the face stock and adhesive but not through the liner. The matrix (waste) around the die-cut is removed, leaving the label on the liner ready for application. Die-cut labels are easily removed from the liner and are less likely to lift when subjected to extreme environments. Die-cut labels are usually supplied on a roll. Machine applied and most machine imprinted labels are die-cut style labels.

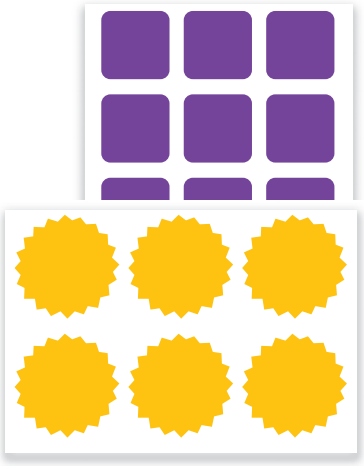
Die-Cut Pin-Fed Labels – Pinfeed labels are commonly used to add variable computer generated information. They are die-cut labels with the addition of pinfeed holes cut into the liner for use with a dot matrix printer. Die-cut pinfeed labels require a 3/8" – 1/2" space on each side of the label and a minimum of 3 1/2 " of liner width to accommodate most dot matrix printers. These labels can be delivered fan-folded or on rolls.

Butt Cut Labels – A rectangular shaped square corner label separated from each other by a single straight blade cut. There are no gaps or extra liner around the label. A butt cut blade cuts through the face stock and adhesive, but not the liner. There are no bleeds on butt cut labels. These labels are delivered on rolls.

Sheeted – A rectangular shaped square corner label that is sheeted individually using a straight edge blade. A sheeter blade cuts through the face stock, adhesive, and liner. A top score or a back score is added to "crack and peel" the liner from the label. There are no bleeds on sheeted labels. They are delivered as individual labels.

Basics of Finishing

Labels can be finished in different forms. The most common forms are rolls, sheeted individually, or fan-folded. The way your labels are finished and packaged will depend upon how they are applied and their usage.



Rolls – Labels finished spooled or rolled on a core. The standard is 1,000 labels on a 3" diameter core, but other quantities per roll and core sizes are available. Common types of rolled labels include product and promotional labels, shipping labels, thermal transfer and direct thermal labels.

Sheeted – These are individual single sheet labels usually containing a back or top score. Sheeted labels can be bulk packed, poly bagged, or shrink-wrapped. Bumper stickers are an example of sheeted labels.

Fan-folded – Die-cut labels with a perforation across the liner are folded back and forth along the perforations creating a stack of labels. Most computer pinfeed labels are delivered fan-folded.

Imprinting Technologies

Specific face stocks are available to be used with these imprinting methods. Always match the correct face stock with technology to insure successful imprinting.

Laser – Lasers are used to image a charged rotating photoconductive drum. The charge in the imaged area attracts toner powder during the drum rotation. High temperatures fuse the toner to the face stock.

Strengths	Limitations	Compatible Label Stocks
High level print contrast Prints high density barcodes well Works well with wide range of paper and film face stocks Low noise level Produces large volumes at high speeds	Excessive heat can shrink or distort some face stocks Jamming and curling of paper may occur May have trouble with thick caliper label stocks	Laser EDP

Thermal Transfer – Transfers heat activated ink from a ribbon to a specially coated paper (thermal transfer stock). Always match ribbon to face stock.

Strengths	Limitations	Compatible Label Stocks
Good resolution, works with high density barcodes High print contrast and multi-color ability Quiet Operation Dual ribbon capability: wax for general purpose or resin for high performance Greater printer reliability with few moving parts Printhead protected from contact with stock by the ribbon	Restricted to smooth face stocks Printer width restricted to 6" or less Ribbon limited to a single pass Resin ribbons are expensive	Thermal Transfer Thermal Transfer Blockout Gloss Thermal Matte Chrome Polyester Bright Chrome Polyester Brushed Chrome Polyester White Polyolefin Vinyl

Ink Jet – A non impact, plateless, process that prints from digital data and uses jets of very fine ink droplets fired at the substrate to form the same or variable information images onto paper or other substrate without a press. There are two main types of ink jet devices: continuous and drop on demand.

Strengths	Limitations	Compatible Label Stocks
The dots can have different colors combined together to create photo-quality images. The dots are positioned very precisely, with resolutions of up to 1440 x 720 dots per inch (dpi) Fairly inexpensive Specialty papers available, ranging from adhesive-backed labels or stickers to business cards and brochures.	Printer itself can cost less than the more expensive replacement ink cartridges Paper recommended by the manufacturer is more expensive.	EDP Laser

Direct Thermal – Computer controlled print heads contain small resistive elements that heat the label surface. A chemical reaction occurs in the face stock, which turns the heated area black.

Strengths	Limitations	Compatible Label Stocks
I.R or visible light readable Accommodating image format No ribbons, quiet, reliable Colored face stock options	Printer width usually limited to 6" or less Restricted to temperatures below 140º F (60º C) Limited selection of film face stocks	Direct Thermal

Dot Matrix – Labels printed with a computer-controlled print head produce a chain of dots in a pattern that forms a printed character. Dots are formed when a series of pins strike an inked ribbon. When the ink is transferred to a product, it dries by absorption or evaporation.

Strengths	Limitations	Compatible Label Stocks
Inexpensive Compatible with a big range of film face stocks and paper Abrasive resistant Indents on various materials such as foils Ribbons can have repeat usage Flexible formats	Resolution may not be suitable for certain applications such as small type or high density barcodes Ribbon is Required High level of noise	Matte Litho EDP Laser

Favorite Label Stocks ★

Stock	Liner	Adhesive	Temperature		Shade	Thickness	General Properties
			Min App.	Service Range			
Gloss	40#	Hot Melt Rubber General Purpose Permanent	+20°F	-65°F to +150°F	White	4mil/55#	A premium cast-coated paper stock with a mirror finish for high quality printing.
Matte Litho	40#	Hot Melt Rubber General Purpose Permanent	+20°F	-65°F to +150°F	Bright White	3.8mil	Matte coated litho face-stock offering outstanding print quality and die-cutting.
Fluorescents Red Pink Orange Green Chartreuse	40#	Hot Melt Rubber General Purpose Permanent	+20°F	-65°F to +150°F	Red Pink Orange Green Yellow/ Green	3.8mil	Matte litho fluorescent paper.
Semi-Gloss	40#	Hot Melt Rubber General Purpose Permanent	+20°F	-65°F to +150°F	Bright White	3mil/60#	Medium gloss paper
Semi-Gloss Removable	40#	Emulsion Acrylic General Purpose Removable	+40°F	0°F to +175°F	Bright White	2.85mil	Medium gloss paper
Yellow Gloss	40#	Hot Melt Rubber General Purpose Permanent	+20°F	-65°F to +150°F	Yellow	3mil/ 60#	Medium gloss paper
Thermal Transfer	40#	Hot Melt Rubber Permanent	+15°F	-15°F to +185°F	White	2.8mil	Smudgeproof coated paper
Direct Thermal	40#	All-temperature emulsion acrylic permanent adhesive.	-20°F	-65°F to +200°F	White	53.5#	Developed to provide good room temperature performance and excellent cold temperature performance w/o sacrificing good die-cutting and stripping properties.

Unique Impression Label Stocks ★★

Stock	Liner	Adhesive	Temperature		Shade	Thickness	General Properties
			Min App.	Service Range			
Bright Silver	40# Bleached Calendered Kraft	Permanent hot melt rubber-based adhesive with excellent initial tack and ultimate adhesion to a variety of surfaces including: polystyrene, polypropylene, polyethylene, treated glass, paper, and corrugate.	+25°F	-65°F to +160°F	Shiny Silver	40#	Lightweight, low caliper, coated paper with a modified acrylic top coating engineered for maximum flexibility and strength.
Dull Silver	40#	General Purpose Permanent	+25°F	-65°F to +220°F	Dull Silver	3.4mil	Laminated foil on a white kraft base sheet. Acrylic top coated for high quality printing.
Clear BOPP	Semi-Bleached Super Calendered Kraft	A clear, water-resistant acrylic emulsion film adhesive, with a high peel and tack, which adheres to a wide variety of surfaces and offers good wet-out	+40°F	-40°F to +160°F	Clear	2mil	2.0 mil clear top coated BOPP offering excellent printing results with water based and UV ink systems. Designed for indoor and outdoor use and as a primary label in non-comformable applications.

Unique Impression continued on next page

Unique Impression Label Stocks ★★ – *continued*

Stock	Liner	Adhesive	Temperature		Shade	Thickness	General Properties
			Min. App.	Service Range			
Bright Gold Foil	40#	Hot Melt Rubber General Purpose Permanent	+40°F	-50° to +150°	Shiny Gold	2.9mil	Laminated foil on a white kraft base sheet. Acrylic top coated for high quality printing.
Dull Gold Foil	40#	Hot Melt Rubber General Purpose Permanent	+40°F	-50°F to +150°F	Dull Gold	2.9mil	Metallized finish paper. Acrylic top coated for high quality printing.
Semi-Gloss Blockout	40#	Emulsion Acrylic General Purpose Permanent	+40°F	-50°F to +150°F	Blue-White	3.4mil	Designed to cover up errors or to block out copy from bleeding through the label.
Thermal Transfer Blockout	40#	Emulsion Acrylic General Purpose Permanent	+25°F	-10°F to +200°F	White	2.8mil	Smudgeproof coated thermal receptive paper. Designed to cover up errors or to block out copy from bleeding through the label.

Ultra Performance Label Stocks ★★★

Stock	Liner	Adhesive	Temperature		Shade	Thickness	General Properties
			Min. App.	Service Range			
Vinyl	40#	Ultra-aggressive permanent adhesive that is an excellent choice for textured or fiberous surfaces.	+35°F	-5°F to +200°F	White	3.4mil	Smooth matte finish, good stock for outdoor and durable label applications. Special inks are recommended.
Semi-Gloss Reposi-tionable	40#	Water Based Emulsion Acrylic Repositionable	+20°F	-20° to +250°	White	6.5mil	The adhesive exhibits good adhesion and clean long-term removability from most smooth surfaces such as hard plastics, metal, glass and paper. It also adheres well to many challenging surfaces such as textured plastic, corru-gated and Teflon.
Semi-Gloss Ultra-Removable	40#	Emulsion Acrylic Ultra-Removable	+45°F	-50°F to +150°F	White	3mil	An adhesive characterized by ultra removability and residue-free removability from most common substrates.
Clear Polyolefin	44# Poly-coated Natural Kaft	Clear general purpose permanent acrylic adhesive, high cohesive strength and adhesion to low surface energy substrates. Short term removability.	+23°F	-20°F to +200°F	Clear	2.5mil	Corona treated, flexible, matte clear polyolefin with exceptional dimensional stability. Liner is designed for high-speed application. Not recommended for sheeting or fanfolding.
White Poly-olefin	44# Poly-coated Natural Kaft	Clear general purpose permanent acrylic ad-hesive, high cohesive strength and adhesion to low surface energy substrates. Short term removability.	+23°F	-20°F to +200°F	White	2mil	Corona treated, flexible, opaque white polyolefin film with exceptional dimensional stability for a wide range of applications including, prime label. Liner is designed for high-speed applications. Not recom-mended for sheeting or fanfolding.

Additional Label Stocks – *(Call for Minimums and Pricing Specifics)*

Stock	Liner	Adhesive	Temperature		Shade	Thickness	General Properties
			Min. App.	Service Range			
EDP	50# Bleached Kraft	Emulsion Acrylic General Purpose Permanent	+25°F	-40°F to +300°F	Bright White	50#	Excellent smudge resistance. Specially enhanced for continuous laser imaging. Designed for excellent adhesion to corrugated cardboard, and superior adhesion to plastics.
Laser	40# Bleached White	Emulsion Acrylic Permanent	+32°F	-4°F to +176°F	Bright White	4mil	Uncoated–Lay Flat
White BOPP Poly-propylene	40# Bleached Glassine	Clear permanent adhesive designed for prime labeling applications including: squeezable and clear labeling applications. Emulsion acrylic.	+20°F	-20°F to +200°F	Bright White (Pearlescent look)	2.6mil	Top coated white biaxially oriented polypropylene film for rigid containers where durabilty is needed.
White Static Cling	9.5mil Poly-coated Liner	N/A	N/A	N/A	White	7.4mil	Clings to most polished, smooth surfaces without the need for adhesive.
Clear Static Cling	9.5mil Poly-Coated Liner	N/A	N/A	N/A	Clear	7mil	Clings to most polished, smooth surfaces without the need for adhesive.
Matte Chrome Polyester	50#	Emulsion Acrylic Permanent	+35°F	-40°F to +200°F	Dull Silver	2mil	Top coated polyester that is thermal transfer receptive.
Bright Chrome Polyester	50#	Emulsion Acrylic Permanent	+35°F	-40°F to +200°F	Shiny Silver	2mil	Top coated polyester that is thermal transfer receptive.
Brushed Chrome Polyester	50#	Emulsion Acrylic Permanent	+35°F	-30°F to +200°F	Brushed Silver	2mil	Top coated polyester that is thermal transfer receptive.
Tyvek	N/A	Non-pressure Sensitive	N/A	N/A	White	8mil	Spun-bonded Olefin
White Tag	C1S	Non-pressure Sensitive	N/A	N/A	White	8-12pt	Coated one side
Manila Tag	Uncoated	Non-pressure Sensitive	N/A	N/A	Ivory	8-12pt	Uncoated
High Gloss Blockout Layflat	52#	Acrylic Permanent	+25°F	-10°F to +200°F	White	3.5mil	Laser Printable. High gloss cover-up label with layflat liner.
White Polyester	50# SCK	Solvent Acrylic Permanent	+45°F	-30°F to +300°F	White	2mil	Good for product ID, rating plate, asset tag, auto under the hood labeling.
Clear Polyester	40#BG	Acrylic Permanent	+23°F	-40°F to +300°F	Clear	1mil	Top coated polyester that is thermal transfer compatible.
Silver Void	50#SCK	Solvent Acrylic Permanent	+45°F	-30°F to +300°F	Silver	2mil	Security polyester that will leave void on surface and label if removed.
Clear BOPP layflat	78# layflat liner	Emulsion Acrylic Removable	+35°F	-40°F to +180°F	Clear	3.6mil–7	Clear BOPP window graphics film. UV Resistant with layflat liner.

Quick Label Art Guide

Files are complete only when they include: all supporting files and fonts, colors separated properly; without additional typesetting or any other file manipulation.

Supported Software

Macintosh or Windows • High Resolution PDF files (*with correct separations*) • QuarkXPress • InDesign • Illustrator • PhotoShop • FreeHand • CorelDraw

Typesetting

We will typeset up to, and including 6 lines of type free of charge. Choose from our 18 most requested type styles illustrated below. If it becomes necessary for us to match type, we will select a typeface that is as close as possible from the entire ADOBE® or Bitstream® Type Libraries.

A-1 Avant Garde	**A-2** *Avant Garde Italic*	**A-3 Avant Garde Bold**	**A-4 *Avant Garde Bold Italic***
H-1 Helvetica	**H-2** *Helvetica Italic*	**H-3 Helvetica Bold**	**H-4 *Helvetica Bold Italic***
T-1 Times	**T-2** *Times Italic*	**T-3 Times Bold**	**T-4** *Times Bold Italic*
P-1 Palatino	**P-2** *Palatino Italic*	**P-3 Palatino Bold**	**P-4** *Palatino Bold Italic*
S-1 *Brush Script*	**S-2** *Park Avenue*		

Sending Files via Electronic Transfer ***(Preferred)*** e-mail to: prepress@wsec.com

To expedite your order you must include:

1) Your name
2) Company name
3) Purchase Order #
4) Phone Number
5) Fax Number
6) E-mail Address
7) Your Western States contact person
8) Fax copy of the e-mailed art to: 800-753-2329

Sending Files via Disk

Supported Media

- CD-R
- DVD±R DL

We do <u>not</u> support the following media

- 720K 3.5" Double Density Floppy Disks

Standard Ink Colors

Black	(PMS 185) Red	Process Blue	(PMS 348) Green	Reflex Blue	(PMS 021) Orange	(PMS 7512) Brown	Pantone Yellow	Opaque White

Flexographic Printing Requirements

- **Copy** is to be placed at least 1/16" away from the edge of the label.
- **Borders**–must be a minimum of 1/16" thick and if they bleed they must extend an additional 1/16" outside of the labels edge.
- **Bleeds**–must extend 1/16" outside the die-cut area. Butt cut and sheeted labels cannot bleed, a small white border will be added to all edges around the outside of the label.
- **Minimum Positive Type**–is 4 points in a block type such as Helvetica, 6 points if the type is a Serif type such as Times Roman.
- **Reverse Type**–Minimum 6 point block type (such as Helvetica) and 8 point Serif type (such as Times Roman) is recommended. Avoid bold or extra light type faces smaller than 8 points.
- **Lines Weights**–Minimum of .5 point or .007 inches.
- **Registration**–Variation color to color is ±1/32". Please set trap to accommodate 1/32" press movement (a minimum of .5 point or 0.007 inch). Overprint black.
- **Flexographic Trap**–A .5 point trap between colors is recommended.
- **Screen Values**–can range from 3% - 90%. Graduated screens can range from 3% - 100%.

Color-coded Pricing and Stock Selections

The pricing information on the following pages has the available label stocks listed on the bottom of each page. These stocks have been placed into three categories: ★**Favorite,** (black), ★★**Unique Impression** (purple) and ★★★**Ultra Performance** (green). For your convenience, each of these categories have been colorized to correspond to the correct pricing on that page. The most popular label sizes are shown in blue and priced to reflect their status.

★Favorite			★★Unique Impression		★★★Ultra Performance
Direct Thermal	Litho	Thermal Transfer	Bright Gold	Dull Gold	Clear Polyolefin
*Fluorescent	Semi-Gloss	Yellow Gloss	Bright Silver	Dull Silver	Semi-Gloss Repositionable
Gloss	Semi-Gloss Removable		Clear Bopp	Gloss Blockout	Semi-Gloss Ultra Removable
*Red, Pink, Orange, Green and Chartreuse			Clear Polystyrene	Thermal Transfer Blockout	Vinyl | White Polyolefin


BREADS FROM ANNA™
BREAD MIX
GLUTEN FREE
Soy & Rice Free
OUTSTANDING TASTE AND TEXTURE!
Net Wt. 20.75 oz. (588 g)
4 pair pack
MEDIUM
DAVENPORT
MANDOLIN
DOUGLAS COUNTY KANSAS TABLE WINE
PRODUCED AND BOTTLED BY DAVENPORT
ORCHARDS & VINEYARDS • EUDORA, KS 66025
750ml
GOVERNMENT WARNING: (1) ACCORDING TO THE SURGEON GENERAL, WOMEN SHOULD NOT DRINK ALCOHOLIC BEVERAGES DURING PREGNANCY BECAUSE OF THE RISK OF BIRTH DEFECTS. (2) CONSUMPTION OF ALCOHOLIC BEVERAGES IMPAIRS YOUR ABILITY TO DRIVE A CAR OR OPERATE MACHINERY, AND MAY CAUSE HEALTH PROBLEMS.
CONTAINS SULFITES
Premium
ROSE Flower Fo
Item Nº 3396
1 Gallon (3.785 Litres)
Makes 64 Gallons of ready-to-use solution
Floralife
The Care and Handling Experts
www.floralife.com
In Case of Emergency
Please Save Us
Dogs Cats Birds
Other
ADMISSIONS OFFICE PHONE NUMBER 525-2400

Die-Cut Squares and Rectangles Pricing–Choose from our most requested square and rectangle labels. **Price is Per 1,000 Labels.** Most popular sizes in **blue**.

Die No.	Size	1,000	2,000	3,000	5,000	10,000
★100500	½" x ½"	69.56	54.76	41.58	30.02	20.40
★★		78.24	61.60	46.78	33.76	22.96
★★★		194.60	123.40	81.64	58.92	34.86
★101002	½" x 1"	69.56	54.76	41.58	30.02	20.40
★★		78.24	61.60	46.78	33.76	22.96
★★★		194.60	123.40	81.64	58.92	34.86
★101501	½" x 1½"	74.06	63.66	54.76	39.14	27.20
★★		83.30	71.62	61.60	44.02	30.60
★★★		207.16	143.46	107.50	76.82	46.46
★102004	½" x 2"	71.80	61.76	53.10	37.98	26.38
★★		80.76	69.48	59.74	42.72	29.68
★★★		200.84	139.16	104.26	74.54	45.06
★101010	¾" x 1"	74.06	63.66	54.76	39.16	27.20
★★		83.30	71.62	61.60	44.06	30.60
★★★		207.16	143.46	107.50	76.88	46.46
★101507A	¾" x 1½"	74.06	63.66	54.76	39.16	27.20
★★		83.30	71.62	61.60	44.06	30.60
★★★		207.16	143.46	107.50	76.88	46.46
★102010	¾" x 2"	71.80	61.76	53.10	37.98	26.38
★★		80.76	69.48	59.74	42.72	29.68
★★★		200.84	139.16	104.26	74.54	45.06
★101003	1" x 1"	74.36	61.74	50.32	36.04	25.18
★★		83.64	69.44	56.60	40.54	28.34
★★★		208.02	139.10	98.78	70.76	43.02
★101800	1" x 1¾"	77.06	65.28	57.00	40.16	29.52
★★		86.68	73.44	64.10	45.16	33.20
★★★		215.58	147.12	111.88	78.82	50.42
★102011	1" x 2"	74.74	63.34	55.26	38.96	28.64
★★		84.08	71.24	62.16	43.84	32.22
★★★		209.10	142.70	108.48	76.50	48.94
★103010	1" x 3"	77.94	68.00	59.58	43.46	32.56
★★		87.66	76.48	67.02	48.88	36.62
★★★		218.04	153.20	116.96	85.32	55.60
★103475	1" x 3½"	165.02	116.96	95.46	63.14	39.52
★★		185.62	131.56	107.38	71.02	44.46
★★★		461.68	263.56	187.40	123.94	67.52
★104000	1" x 4"	165.02	116.94	95.46	63.14	39.52
★★		185.62	131.54	107.38	71.02	44.46
★★★		461.68	263.50	187.40	123.94	67.52
★104999	1" x 5"	169.64	120.64	98.42	64.52	41.60
★★		190.80	135.68	110.70	72.58	46.80
★★★		474.56	271.82	193.20	126.64	71.08
★101500	1⅛" x 1½"	77.06	65.28	57.00	40.16	29.52
★★		86.68	73.44	64.10	45.16	33.20
★★★		215.58	147.12	111.88	78.82	50.42
★101250	1¼" x ¾"	74.06	63.66	54.76	39.14	27.20
★★		83.30	71.62	61.60	44.02	30.60
★★★		207.16	143.46	107.50	76.82	46.46
★102012	1¼" x 2"	81.44	71.04	62.26	45.42	34.00
★★		91.60	79.92	70.02	51.08	38.26
★★★		227.84	160.10	122.22	89.16	58.08
★102500	1 7/16" x 2½"	87.42	76.86	68.12	55.58	39.62
★★		98.34	86.46	76.64	62.52	44.58
★★★		244.56	173.20	133.74	109.12	67.70
For 2nd or 3rd Color Add (Per 1000)		40.00	24.00	16.00	11.00	6.50

Price includes one standard ink color: Black, Red (PMS 185), Process Blue, Green (PMS 348), Reflex Blue, Orange (PMS 021), Brown (PMS 7512), Pantone Yellow and Opaque White.

★Favorite

Direct Thermal | *Fluorescent | Gloss | Litho | Semi-Gloss | Semi-Gloss Removable | Thermal Transfer | Yellow Gloss

*Red, Pink, Orange, Green and Chartreuse

★★Unique Impression

Bright Gold | Bright Silver | Clear Bopp | Clear Polystyrene | Dull Gold | Dull Silver | Gloss Blockout | Thermal Transfer Blockout

★★★Ultra Performance

Clear Polyolefin | Semi-Gloss Repositionable | Semi-Gloss Ultra Removable | Vinyl | White Polyolefin

Die-Cut Squares and Rectangles Pricing–*Continued*

Price is Per 1,000 Labels. Most popular sizes in **blue**.

Die No.	Size	1,000	2,000	3,000	5,000	10,000
★104001	1½" x 4"	174.26	124.36	101.40	68.24	43.72
★★		196.02	139.88	114.04	76.76	49.18
★★★		487.50	280.20	199.04	133.96	74.68
★101831	1¾" x 1¾"	81.44	71.04	62.26	45.42	39.62
★★		91.60	79.92	70.02	51.08	44.58
★★★		227.84	160.10	122.22	89.16	67.70
★102810	1¾" x 2¾"	87.40	76.86	68.12	55.56	39.62
★★		98.30	86.46	76.64	62.50	44.58
★★★		244.48	173.20	133.74	109.06	67.70
★101001	2" x 1"	77.06	65.28	57.00	40.16	29.52
★★		86.68	73.44	64.10	45.16	33.20
★★★		215.58	147.12	111.88	78.82	50.42
★101510	2" x 1½"	81.44	71.04	62.26	45.42	34.00
★★		91.60	79.92	70.02	51.08	38.26
★★★		227.84	160.10	122.22	89.16	58.08
★102017	2" x 2"	87.42	75.80	68.48	56.12	38.52
★★		98.34	85.26	77.04	63.12	43.34
★★★		244.56	170.78	134.44	110.14	65.80
★102521	2" x 2½"	87.56	77.52	70.34	57.04	39.76
★★		98.48	87.20	79.12	64.18	44.72
★★★		244.94	174.68	138.06	111.98	67.92
★103004	2" x 3"	87.56	77.52	70.34	57.04	39.76
★★		98.48	87.20	79.12	64.18	44.72
★★★		244.94	174.68	138.06	111.98	67.92
★105004	2" x 5"	192.68	139.16	113.22	85.76	59.08
★★		216.72	156.52	127.34	96.48	66.46
★★★		539.00	313.54	222.24	168.36	100.94
★106001	2" x 6"	201.88	146.56	119.14	90.86	63.28
★★		227.08	164.86	134.02	102.20	71.20
★★★		564.76	330.24	233.88	178.36	108.10
★102500B	2¼" x 2½"	87.56	77.52	70.34	57.04	39.76
★★		98.48	87.20	79.12	64.18	44.72
★★★		244.94	174.68	138.06	111.98	67.92
★100501	2½" x ½"	275.60	63.66	54.76	39.14	27.20
★★		310.00	71.62	61.60	44.02	30.60
★★★		771.00	143.46	107.50	76.82	46.46
★101900	2½" x 1⅞"	87.56	77.52	70.34	57.04	39.76
★★		98.48	87.20	79.12	64.18	44.72
★★★		244.94	174.68	138.06	111.98	67.92
★102505	2½" x 2½"	90.26	79.92	72.52	58.82	41.00
★★		101.52	89.90	81.56	66.16	46.12
★★★		252.50	180.10	142.34	115.44	70.04
★102753	2½" x 2¾"	90.26	79.92	72.52	58.82	41.00
★★		101.52	89.90	81.56	66.19	46.12
★★★		252.50	180.10	142.34	115.44	70.04
★104505	2½" x 4½"	199.82	132.28	110.92	85.58	64.02
★★		224.76	148.80	124.78	96.26	72.02
★★★		558.98	298.08	217.76	167.98	109.36
★101004	3" x 1"	77.94	68.00	59.58	43.46	32.56
★★		87.66	76.48	67.02	48.88	36.62
★★★		218.04	153.20	116.96	85.32	55.60
★101503	3" x 1½"	90.12	78.10	70.60	57.82	39.70
★★		101.38	87.86	79.42	65.04	44.66
★★★		252.12	176.00	138.60	113.50	67.84
For 2nd or 3rd Color Add (Per 1000)		40.00	24.00	16.00	11.00	6.50

Price includes one standard ink color: Black, Red (PMS 185), Process Blue, Green (PMS 348) Reflex Blue, Orange (PMS 021), Brown (PMS 7512), Pantone Yellow, and Opaque White.

***Favorite**

Direct Thermal | Litho | Thermal Transfer
*Fluorescent | Semi-Gloss | Yellow Gloss
Gloss | Semi-Gloss Removable

*Red, Pink, Orange, Green and Chartreuse

****Unique Impression**

Bright Gold | Dull Gold
Bright Silver | Dull Silver
Clear Bopp | Gloss Blockout
Clear Polystyrene | Thermal Transfer Blockout

*****Ultra Performance**

Clear Polyolefin
Semi-Gloss Repositionable
Semi-Gloss Ultra Removable
Vinyl | White Polyolefin

Die-Cut Squares and Rectangles Pricing–*Continued*

Price is Per 1,000 Labels. Most popular sizes in **blue**.

Die No.	Size	1,000	2,000	3,000	5,000	10,000
★102020	3" x 2"	87.56	77.52	70.34	57.04	39.76
★★		98.48	87.20	79.12	64.18	44.72
★★★		244.94	174.68	138.06	111.98	67.92
★103070	3" x 3"	108.10	94.88	84.36	70.16	50.50
★★		121.58	106.74	94.90	78.92	56.82
★★★		302.38	213.82	165.60	137.74	86.28
★104030	3" x 4"	113.96	100.78	90.24	74.42	61.60
★★		128.18	113.36	101.50	83.70	69.30
★★★		318.80	227.10	177.12	146.08	105.22
★106003	3" x 6"	228.20	157.78	133.30	107.32	84.12
★★		256.68	177.48	149.94	120.72	94.62
★★★		638.38	355.52	261.68	210.66	143.68
★108003	3" x 8"	247.40	181.52	155.46	129.48	101.82
★★		278.28	204.16	174.88	145.64	114.56
★★★		692.12	409.00	305.18	254.16	173.96
★102003	3½" x 2"	98.38	86.40	76.86	66.50	47.02
★★		110.68	97.18	86.46	74.80	52.90
★★★		275.24	194.68	150.88	130.54	80.32
★103506	3½" x 3½"	208.72	136.98	112.34	85.00	59.80
★★		234.76	154.08	126.36	95.60	67.28
★★★		583.88	308.64	220.52	166.84	102.16
★105010	3½" x 5"	217.72	146.06	122.64	106.10	81.84
★★		244.90	164.30	137.96	119.36	92.08
★★★		609.10	329.14	240.74	208.28	139.82
★102032	4" x 2"	94.14	82.68	73.58	63.66	44.98
★★		105.90	93.00	82.78	71.62	50.60
★★★		263.38	186.30	144.44	124.98	76.86
★102525	4" x 2½"	201.18	142.10	109.58	75.16	52.06
★★		226.30	159.84	123.26	84.54	58.56
★★★		562.84	320.18	215.10	147.54	88.94
★102902	4" x 2 15/16"	113.96	100.78	90.24	74.42	61.60
★★		128.18	113.36	101.50	83.70	69.30
★★★		318.80	227.10	177.12	146.08	105.22
★103077	4" x 3"	109.06	96.46	86.38	71.22	58.92
★★		122.66	108.50	97.16	80.10	66.30
★★★		305.08	217.36	169.54	139.80	100.66
★104042	4" x 4"	131.80	112.56	96.32	83.34	64.50
★★		148.24	126.60	108.34	93.74	72.56
★★★		368.70	253.62	189.08	163.60	110.18
★103006	4¼" x 3"	210.14	150.40	117.88	85.38	64.02
★★		236.38	169.16	132.58	96.04	72.02
★★★		587.88	338.88	231.38	167.60	109.36
★103080	5" x 3"	126.14	107.70	92.18	79.76	60.98
★★		141.88	121.14	103.70	89.72	68.60
★★★		352.88	242.68	180.96	156.56	104.18
★103505	5" x 3½"	217.72	146.06	122.64	106.10	81.84
★★		244.90	164.30	137.96	119.36	92.08
★★★		609.10	329.14	240.74	208.28	139.82
★104045	5" x 4"	134.98	116.94	97.82	89.00	74.74
★★		151.84	131.54	110.02	100.10	84.08
★★★		377.64	263.50	192.00	174.68	127.68
★104060	6" x 4"	198.76	127.06	104.62	93.42	78.10
★★		223.58	142.92	117.68	105.10	87.86
★★★		556.04	286.28	205.36	183.40	133.40
For 2nd or 3rd Color Add (Per 1000)		**40.00**	**24.00**	**16.00**	**11.00**	**6.50**

Price includes one standard ink color: Black, Red (PMS 185), Process Blue, Green (PMS 348) Reflex Blue, Orange (PMS 021), Brown (PMS 7512), Pantone Yellow, and Opaque White.

***Favorite**

Direct Thermal | Litho | Thermal Transfer
*Fluorescent | Semi-Gloss | Yellow Gloss
Gloss | Semi-Gloss Removable

*Red, Pink, Orange, Green and Chartreuse

****Unique Impression**

Bright Gold | Dull Gold
Bright Silver | Dull Silver
Clear Bopp | Gloss Blockout
Clear Polystyrene | Thermal Transfer Blockout

*****Ultra Performance**

Clear Polyolefin
Semi-Gloss Repositionable
Semi-Gloss Ultra Removable
Vinyl | White Polyolefin

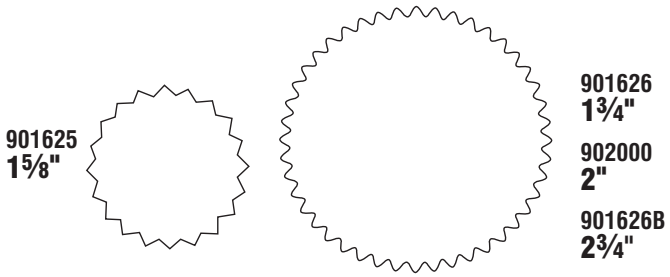

5
YEAR
WARRANTY
ASMAR'S
Mediterranean Food, Inc.
HOMMUS
ROASTED RED PEPPER
PARVE
Keep Refrigerated
Net Wt. 8oz. (227g)
T.G.I.
FRIDAY'S
NEW!
ALSO
GREAT HEATED!
SHARP CHEDDAR
FLAVORED CHEESE DIP
GRAB A CHIP
TAKE A DIP!
NET WT 12 OZ (340g)
NATIONAL
BOOK
CHALLENGE
CANDIDATE
take me
fishing
hampton's on the run breakfast bag.®
apple. muffin. cereal bar. water. enjoy.
MACHO
MADNESS
THE FOOD GURU
MEXICAN
MEAT
$10 today
takes it away!
Thank
You
SHIP TODAY
DATE:_____

Die-Cut Circles / Bursts Pricing–Circles and bursts are most often used for pricing applications, special prices, or drawing attention to a product.

Price is Per 1,000 Labels. Most popular sizes in **blue**.

	Die No.	Size	1,000	2,000	3,000	5,000	10,000
Circle	★200500	½"	69.56	54.76	41.36	30.42	20.98
	★★		78.24	61.60	46.54	34.22	23.62
	★★★		194.60	123.40	81.20	59.72	35.86
Circle	★200750	¾"	71.80	59.34	48.06	34.92	23.90
	★★		80.76	66.74	54.06	39.28	26.88
	★★★		200.84	133.70	94.36	68.54	40.82
Circle	★201010	1"	74.06	63.66	54.76	39.32	27.00
	★★		83.30	71.62	61.60	44.24	30.38
	★★★		207.16	143.46	107.50	77.20	46.14
Circle	★201500	1½"	81.52	70.96	62.26	45.64	34.02
	★★		91.70	79.82	70.02	51.34	38.28
	★★★		228.06	159.90	122.22	89.58	58.14
Circle	★202000	2"	87.36	77.06	68.12	56.26	38.28
	★★		98.28	86.68	76.64	63.28	43.06
	★★★		244.40	173.64	133.74	110.42	65.40
Circle	★202500	2½"	90.32	79.90	72.52	58.82	41.18
	★★		101.58	89.86	81.56	66.16	46.34
	★★★		252.66	180.02	142.34	115.44	70.36
Circle	★203000	3"	108.10	94.70	84.36	70.96	51.08
	★★		121.58	106.52	94.90	79.82	57.46
	★★★		302.38	213.38	165.60	139.30	87.26
Circle	★203500	3½"	120.44	108.66	94.20	76.78	57.82
	★★		135.48	122.24	105.96	86.36	65.04
	★★★		336.92	244.86	184.92	150.72	98.76
Circle	★204000	4"	139.18	116.44	98.26	86.12	66.66
	★★		156.56	130.98	110.52	96.88	75.00
	★★★		389.36	262.38	192.86	169.06	113.88
Burst	★901625	1⅝"	94.72	76.64	68.12	51.50	38.28
	★★		106.54	86.22	76.64	57.94	43.06
	★★★		265.00	172.70	133.74	101.12	65.40
Burst	★901626	1¾"	96.10	82.74	74.06	62.18	42.56
	★★		108.10	93.06	83.30	69.94	47.88
	★★★		268.84	186.42	145.36	122.04	72.70
Burst	★902000	2"	91.04	84.94	70.36	55.32	38.70
	★★		102.40	95.54	79.14	62.22	43.54
	★★★		254.66	191.40	138.12	108.58	66.12
Burst	★901626B	2¾"	103.62	85.84	78.50	64.76	45.38
	★★		116.56	96.56	88.28	72.86	51.06
	★★★		289.90	193.44	154.08	127.14	77.52
	For 2nd or 3rd Color Add (Per 1000)		40.00	24.00	16.00	11.00	6.50

Price includes one standard ink color: Black, Red (PMS 185), Process Blue, Green (PMS 348) Reflex Blue, Orange (PMS 021), Brown (PMS 7512), Pantone Yellow, and Opaque White.



★Favorite

Direct Thermal | Litho | Thermal Transfer
*Fluorescent | Semi-Gloss | Yellow Gloss
Gloss | Semi-Gloss Removable

*Red, Pink, Orange, Green and Chartreuse

★★Unique Impression

Bright Gold | Dull Gold
Bright Silver | Dull Silver
Clear Bopp | Gloss Blockout
Clear Polystyrene | Thermal Transfer Blockout

★★★Ultra Performance

Clear Polyolefin
Semi-Gloss Repositionable
Semi-Gloss Ultra Removable
Vinyl | White Polyolefin


Editors Pick
BEST BUY
by
BACKYARD Flyer
magazine
Mall Security Camera
02315
Savings Bonanza!
FREE
with Purchase
7-1/4" Pro-Grade Circular Saw
$129
VALUE!
25
years
1986 -2011
US Patent #
0767901
Breckridge
Fire Department
Thank You for Visiting Us at the Show!
19 Lincoln High 52
Battery Recycling
I was Born at
St. Joseph's

Die-Cut Ovals Pricing

Price is Per 1,000 Labels. Most popular sizes in **blue**.

	Die No.	Size	1,000	2,000	3,000	5,000	10,000
Oval	★301500	¾" x 1½"	81.14	71.00	62.20	45.50	34.06
	★★		91.26	79.86	69.96	51.18	38.32
	★★★		226.98	159.96	122.10	89.32	58.18
Oval	★302000	1" x 2"	81.10	70.96	62.18	45.50	34.02
	★★		91.24	79.82	69.94	51.18	38.28
	★★★		226.90	159.90	122.04	89.32	58.14
Oval	★302500	1 1/16" x 2½"	85.84	74.42	65.86	48.86	37.62
	★★		96.56	83.70	74.10	54.96	42.32
	★★★		240.16	167.68	129.30	95.92	64.26
Oval	★302900	1⅞" x 2⅞"	96.18	82.82	74.06	62.18	42.56
	★★		108.20	93.16	83.30	69.94	47.88
	★★★		269.08	186.62	145.36	122.04	72.70
Oval	★303750	2¼" x 3¾"	102.10	87.36	77.06	65.10	45.38
	★★		114.86	98.28	86.68	73.22	51.06
	★★★		285.66	196.86	151.26	127.78	77.52
Oval	★304250	3" x 4¼"	121.96	107.40	94.92	82.04	65.56
	★★		137.18	120.80	106.76	92.28	73.74
	★★★		341.16	242.00	186.32	161.06	111.98
	For 2nd or 3rd Color Add (Per 1000)		40.00	24.00	16.00	11.00	6.50

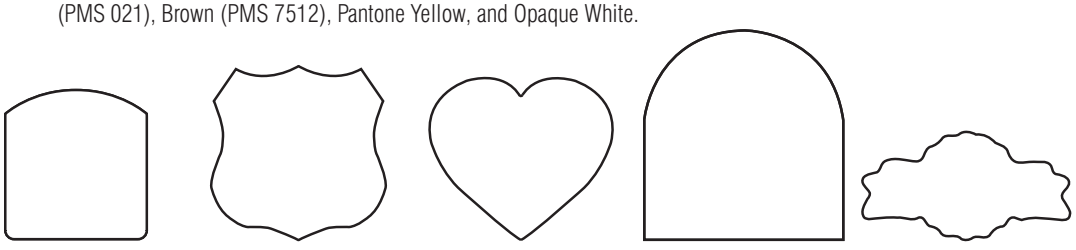
Price includes one standard ink color: Black, Red (PMS 185), Process Blue, Green (PMS 348) Reflex Blue, Orange (PMS 021), Brown (PMS 7512), Pantone Yellow, and Opaque White.

Die-Cut Special Shapes Pricing

Price is Per 1,000 Labels.

	Die No.	Size	1,000	2,000	3,000	5,000	10,000
Small Tombstone	★901700	1 11/16" x 1½"	99.10	84.52	76.24	63.44	43.50
	★★		111.48	95.08	85.74	71.36	48.94
	★★★		277.26	190.46	149.64	124.54	74.32
Badge	★901921	1⅞" x 1⅞"	96.24	82.90	74.06	62.18	42.56
	★★		108.26	93.24	83.30	69.94	47.88
	★★★		269.24	186.80	145.36	122.04	72.70
Heart	★902020	1¾" x 2"	107.76	92.82	82.90	69.58	47.20
	★★		121.22	104.40	93.24	78.28	53.10
	★★★		301.46	209.16	162.74	136.60	80.64
Large Tombstone	★902320	2¼" x 2⅜"	102.96	88.64	78.80	65.28	44.66
	★★		115.82	99.70	88.62	73.44	50.26
	★★★		288.04	199.72	154.68	128.16	76.30
Anniversary	★902314	1 7/32" x 2 5/16"	107.92	94.72	83.92	71.94	45.94
	★★		121.40	106.54	94.40	80.92	51.68
	★★★		301.92	213.44	164.74	141.20	78.48
	For 2nd or 3rd Color Add (Per 1000)		40.00	24.00	16.00	11.00	6.50

Price includes one standard ink color: Black, Red (PMS 185), Process Blue, Green (PMS 348) Reflex Blue, Orange (PMS 021), Brown (PMS 7512), Pantone Yellow, and Opaque White.



Small Tombstone | Badge | Heart | Large Tombstone | Anniversary

★Favorite

Direct Thermal | Litho | Thermal Transfer
*Fluorescent | Semi-Gloss | Yellow Gloss
Gloss | Semi-Gloss Removable
*Red, Pink, Orange, Green and Chartreuse

★★Unique Impression

Bright Gold | Dull Gold
Bright Silver | Dull Silver
Clear Bopp | Gloss Blockout
Clear Polystyrene | Thermal Transfer Blockout

★★★Ultra Performance

Clear Polyolefin
Semi-Gloss Repositionable
Semi-Gloss Ultra Removable
Vinyl | White Polyolefin


Gillam FARMS
WAHL®
Outdoors
AL DEBEVEC'S
fabrication
715-267-7141
personalcandle
HEALING
ginger sandalwood clove
KETTLE MORAINE
FALL COLOR FESTIVAL
WWW.FALLCOLORFESTIVAL.ORG
MY CANDY BASKETS
JONES
FOR
SHERIFF
2 Mil
White Polyester
RL18005
Permanent Adhesive
50# Liner

4-Color Process Digitally Printed Die-Cut Labels

Price is Per Lot or Per 1,000 Labels.

Die No.	Size	Price Per Lot 250	Price Per Lot 500	Price Per 1,000 1,000	Price Per 1,000 2,000	Price Per 1,000 3,000	Price Per 1,000 5,000
Squares/Rectangles L01372	2" x 2"	422.00	445.22	472.64	244.76	173.02	107.62
L00965	2" x 3"	428.34	455.76	491.64	274.30	192.02	124.50
L00564	2" x 4"	432.56	466.32	512.74	291.18	202.56	137.16
L00806	3" x 3"	434.66	470.54	519.06	295.40	208.90	147.70
L00445	3" x 4"	441.00	485.30	527.50	299.62	211.00	166.70
L01152	3" x 5"	449.44	500.08	548.60	316.50	221.56	170.92
L01168	4" x 3"	441.00	485.30	527.50	299.62	211.00	166.70
L00500	4" x 4"	466.32	512.74	590.80	337.60	240.54	177.24
L00762	4" x 6"	487.42	557.04	622.46	384.02	286.96	246.88
Circles L00768	2"	422.00	445.22	472.64	244.76	173.02	107.62
L01024	3"	434.66	470.54	519.06	295.40	208.90	147.70
L00591	4"	466.32	512.74	590.80	337.60	240.54	177.24
Ovals L00604	1⅞" x 2⅞"	428.34	455.76	491.64	274.30	192.02	124.50

Price includes 4-color process printing on Semi-gloss face stock with a pre-coat resulting in a high gloss finish. Not suitable for writing on. If you require a color match proof, please add $100.00 each. To combine multiple copies on a single order, call for pricing.

Please note: Digital printing will not match PMS swatch books, although some PMS colors can be recreated within an acceptable color range. PMS charts are to be used to reference a spectrum of desired colors when printing digitally.

★Favorite
Semi-Gloss Semi-Gloss Removable

Bumper Sticker Pricing

–Bumper stickers are made of a 4 mil (0.004") thick white vinyl and laminated for the best weather resistance and longevity. These labels are not only durable, but easily removed and will not damage the vehicle's surface. Use them to promote your business, services, products or candidate. These labels are packaged in single sheets. No bleeds on bumper stickers. Printing may be as close as 1/16" from edge. A flood coat may be applied to flexographic printed bumper stickers.

Price is Per Lot or Per 1,000 Labels.

Die No.	Size	Price Per Lot 250	Price Per Lot 500	Price Per 1,000 1,000	Price Per 1,000 1,500	Price Per 1,000 2,000
815000A	2¾" x 15"	234.06	311.76	402.38	363.14	312.84
711000	3" x 11"	208.12	256.04	350.64	320.04	260.02
815000C	3¾" x 7½"	197.78	247.20	310.74	285.42	233.46
815000B	3¾" x 15"	259.94	315.16	480.08	427.84	401.70
For 2nd or 3rd Color Add (Per Lot or Per 1,000)		10.00	20.00	40.00	32.00	24.00

Price includes one standard ink color: Black, Red (PMS 185), Process Blue, Green (PMS 348) Reflex Blue, Orange (PMS 021), Brown (PMS 7512), Pantone Yellow.

Bumper Sticker 4-Color Process Digitally Printed Pricing

No bleeds on bumper stickers. Printing may be as close as 1/16" from edge.

Price is Per Lot or Per 1,000 Labels.

Die No.	Size	Price Per Lot 250	Price Per Lot 500	Price Per 1,000 1,000	Price Per 1,000 1,500	Price Per 1,000 2,000
815000A	2¾" x 15"	713.18	926.30	1280.00	1036.02	790.00
711000	3" x 11"	660.44	844.00	1080.00	972.72	740.00
815000C	3¾" x 7½"	633.00	822.90	1060.00	938.96	700.00
815000B	3¾" x 15"	738.50	970.60	1352.00	1101.42	834.00

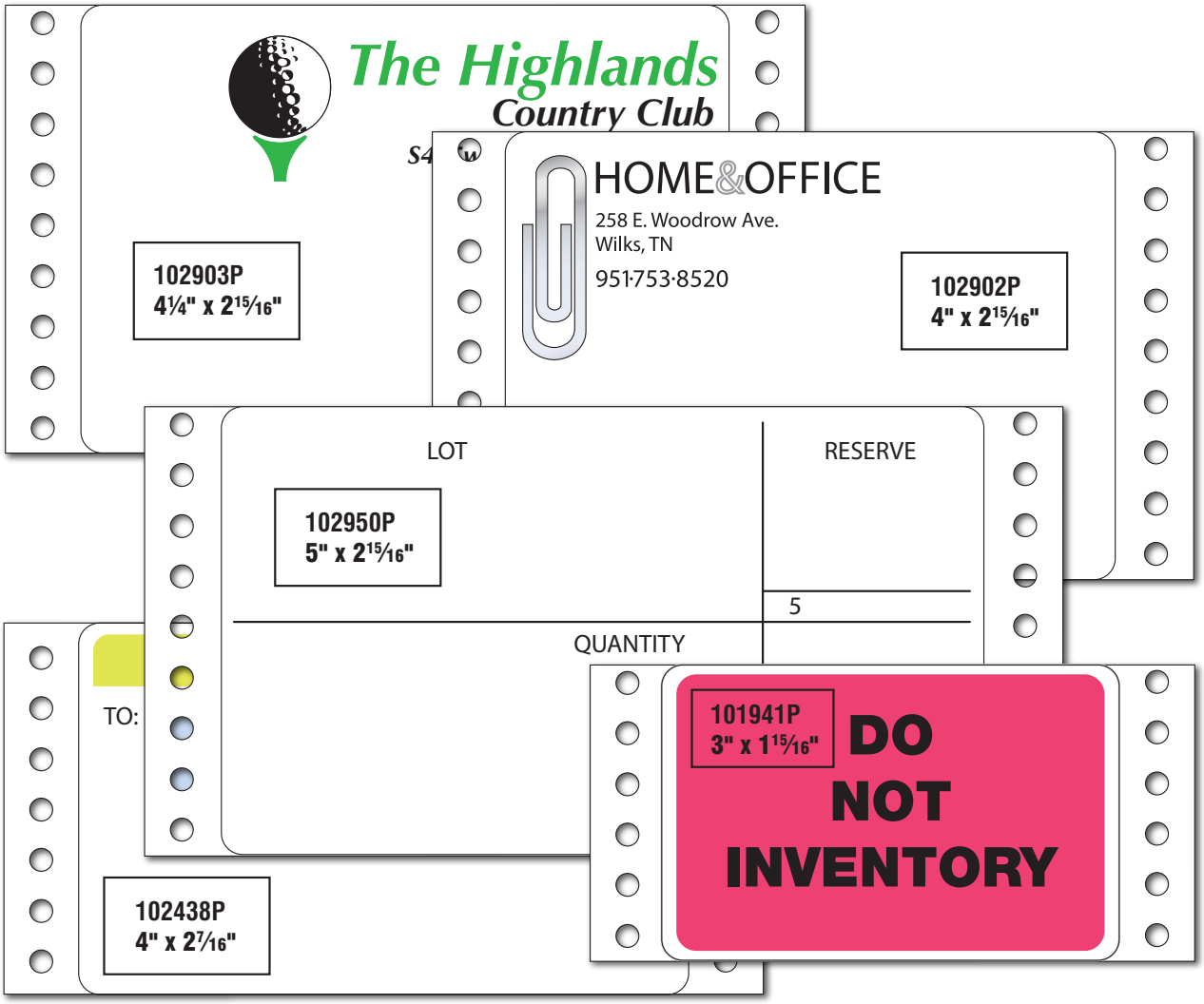
Price includes 4-color process printing. If you require a color match proof please add $100.00 each. To combine multiple copies on a single order, call for pricing.

Please note: Digital printing will not match PMS swatch books, although some PMS colors can be recreated within an acceptable color range. PMS charts are to be used to reference a spectrum of desired colors when printing digitally.

Computer Pinfeed Pricing–Pinfeed labels are perforated, fan-folded, and available in the most popular sizes. Litho stock is suggested for this use. **Price is Per 1,000 Labels.**

Die No.	Size	1,000	2,000	3,000	5,000	10,000
101941P	3" x 1 15/16"	104.62	82.24	71.00	55.58	46.62
102438P	4" x 2 7/16"	138.18	108.44	82.62	72.70	63.88
102902P	4" x 2 15/16"	142.92	114.48	88.22	76.76	56.62
102903P	4 1/4" x 2 15/16"	147.20	120.16	102.14	84.12	66.60
102950P	5" x 2 15/16"	153.50	131.40	103.44	82.54	60.62
103975P	5" x 3 15/16"	202.74	166.36	132.78	109.14	94.98
For 2nd or 3rd Color Add (Per 1000)		40.00	24.00	16.00	11.00	6.50

Price includes one standard ink color: Black, Red (PMS 185), Process Blue, Green (PMS 348) Reflex Blue, Orange (PMS 021), Brown (PMS 7512), Pantone Yellow.



★Favorite Litho

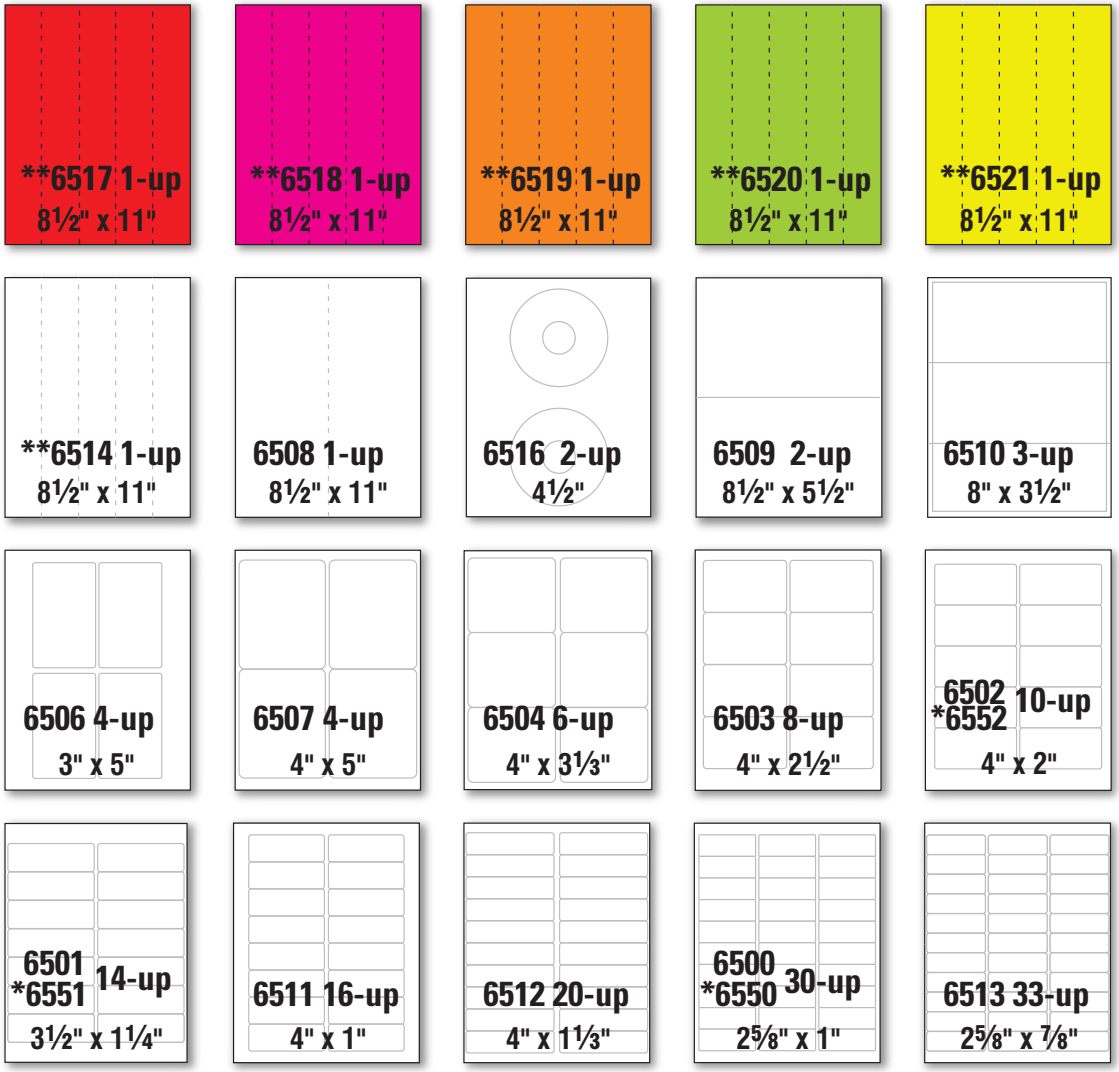
Repositionable Personalized Custom Calendars

With Removable/Repositionable Calendar Labels, your clients can keep track of the days and keep your business right at their fingertips! This convenient reference is a perfect addition to any computer keyboard, monitor or desk. These handy calendars easily pull off and re-stick where you need them without leaving a gooey label residue. Add your company's imprint, and they're great items for clients or prospects. A color flyer is available for downloading at www.westernstatesenvelope.com:80/about/pressReleases/prod_flyers.htm. *Call for pricing.*

Calendar Size 1⅛" x 13⅞" **Your Imprint Area** 1⅜" x 1"

Bright White, Clear and Fluorescent Laser Label Sheets

Blank Bright White and *Translucent Clear Laser Label Sheets are priced per 100 Sheets and packaged 1000 per carton. A premium Bright White (*91% Brightness*) 50# extremely dense, **Brightly Colored Fluorescent stock and *Translucent Clear Laser stock utilize a no ooze permanent adhesive and are back-scored. This sheet is designed for trouble free use in most high resolution laser printers and copiers. These sixteen popular label configurations are diecut on 8½ x 11 sheets.



For pricing, please consult your envelope price list or download a price list at www.westernstatesenvelope.com.
***Products 6514-6421 were designed for Offset or Letterpress printing. Scores make the back liner easier to remove when cut to at least 1¾" wide.*

All Laser Label Sheets are Packaged 100 sheets per box/20 boxes per carton.

Quick Label Order Guide

Label Stocks – Please see bottom of each pricing page for available stocks and style category.

*Favorite			**Unique Impression		***Ultra Performance
Direct Thermal	Litho	Thermal Transfer	Bright Gold	Dull Gold	Clear Polyolefin
*Fluorescent	Semi-Gloss	Yellow Gloss	Bright Silver	Dull Silver	Semi-Gloss Repositionable
Gloss	Semi-Gloss Removable		Clear Bopp	Gloss Blockout	Semi-Gloss Ultra Removable
*Red, Pink, Orange, Green and Chartreuse			Clear Polystyrene	Thermal Transfer Blockout	Vinyl | White Polyolefin

Adhesives – The adhesives used on the labels in this catalog (except "removable, ultra removable and repositionable") are a general purpose, permanent adhesive, which should perform well under normal environmental conditions. If abnormal conditions will be encountered, such as high or low temperatures, please consult us prior to ordering labels. **We strongly suggest testing the labels' adhesive on the item it will be adhered to**. Samples available upon request.

Standard Ink Colors

Black | (PMS 185) Red | Process Blue | (PMS 348) Green | Reflex Blue | (PMS 021) Orange | (PMS 7512) Brown | Pantone Yellow | Opaque White

PMS match available at $60.00 per color.

Proofs – Electronic PDF or color laser proofs (not true to color) are available upon request. If a proof is requested, a ship date will be assigned after proof approval. Color match proofs are $150 each for flexographic printed labels and $100 each for digitally printed labels.

Packaging Information – All label items are routinely packed in cartons. Roll quantities, for most items, are 1000 labels per roll on a 3" core. These specifications may vary, however, depending on label size. Call us for pricing roll quantities of 500, 250 or 100.

Retail Pricing – List prices are based on printing one standard ink color on the designated label stocks listed. Digitally printed label prices are based on 4-color process printing on the designated label stocks listed.

Additional Charges

PMS match–$60 per color
Fluorescent/Metallic Inks–Call for pricing
Bleeds–$25 setup charge per color
Screens–$25 setup charge per color
Copy/Plate changes–$20 per change
Color wash-up–$20 per wash up
Barcode–$10 each; one time charge
Typesetting: up to six lines–No charge
Over six lines–$1 per line
4-color process–Call for pricing
Color match proof–$150 each for a flexographic printed label
$100 each for a digitally printed label

Typesetting – We will typeset up to, and including, 6 lines of type free of charge. Choose one of our 18 most requested type styles seen below. If it becomes necessary for us to match type, we will select a typeface that is as close as possible from the entire ADOBE® or Bitstream® Type Libraries.

A-1 Avant Garde	**A-2** *Avant Garde Italic*	**A-3 Avant Garde Bold**	**A-4** ***Avant Garde Bold Italic***
H-1 Helvetica	**H-2** *Helvetica Italic*	**H-3 Helvetica Bold**	**H-4** ***Helvetica Bold Italic***
T-1 Times	**T-2** *Times Italic*	**T-3 Times Bold**	**T-4** ***Times Bold Italic***
P-1 Palatino	**P-2** *Palatino Italic*	**P-3 Palatino Bold**	**P-4** ***Palatino Bold Italic***
S-1 *Brush Script*	**S-2** *Park Avenue*		

Machine Applied Labels – Call to discuss specifications and obtain pricing information.

Over Run/Under Run ±10%

Freight – F.O.B. delivered on 10,000 labels or more.

Embossing – *Call for Pricing.*

Foil Stamping – *Call for Pricing.*

Additional Capabilities/Products

- Products can be delivered on rolls, sheets, or fan-folded
- Products can be packaged in cartons, clam shells (for retail), shrink wrapped, or zip-lock bags
- Consecutive numbering and barcoding on rolls, sheets or fan-folded labels and tags
- 8½" x 11" Laser Sheets
- Piggyback Labels
- Coupon Labels
- Static-Cling
- Scratch & Sniff/Scented Labels
- Self Laminating Labels
- Tags/Shelf Hangers/Door Hangers
- Business Card Labels
- Visitor Badges
- Additional Stocks and Adhesives are available. *Call for Pricing*.
- Envelopes of all shapes, sizes, styles, and colors!
- Visit our web site at www.westernstatesenvelope.com for downloadable Layouts and Die lines.

Door Hangers

Removable

Cold Foil + Embossed

PEAK AWARD WINNER

Scratch & Sniff Scented Labels

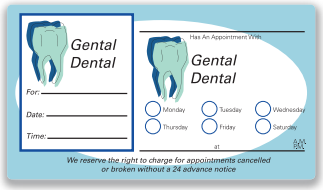
Tags

Coupon Labels

Static Cling

Piggyback Labels

Appointment Labels

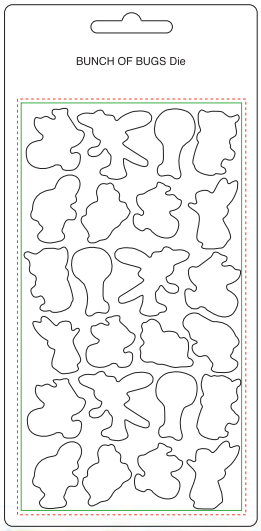


Self Laminating Labels

Business Card Labels

Flexographic Technology

3/0 Color, 4-Color +4 extra units, 6/0 Color, up to 8/0 Color Flexographic Label Presses.



Modular Design

- Die-cutting
- Sheeting
- Folding
- Perforating
- Rewinding
- Laminating

Exceptional Print Quality

- Quick "Drop-in" Doctor Blade System provides consistent coverage and enhances color control from run to run.
- Helical Gearing allows more precise and consistent registry and eliminates gear marking.

Conversion Versatility

The 6/0 and 8/0 color presses allow two-sided printing in a single pass and can be used in a variety of application conversions.

• Die-Cutting • Rewinding • Folding • Sheeting • Perforating • Laminating

Enhanced Versatility

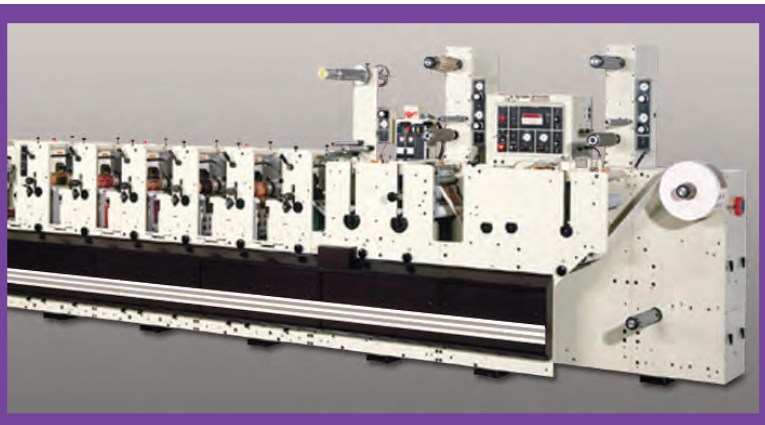
- 15" and 24" Print and die repeat offers flexibility to layout jobs for optimum versatility (*24" for 8-color only*).
- Web turnbar mounted between two print stations allows printing on both face and liner.

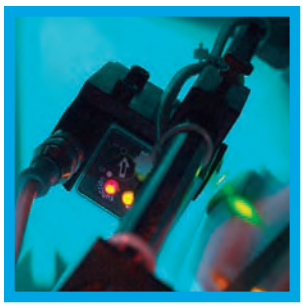
Ideal for a Variety of Applications

- Cosmetics
- Household Products
- Shipping Labels
- Industrial Pressure Sensitive
- Automotive
- Tags/Hangers
- Health and Beauty
- Pharmaceutical
- Prime Labels
- Hobbies and Collectables
- Food and Beverages
- Children's Stickers

Specifications

- 7" and 17" Maximum Press Width
- 8 Maximum Print Stations
- 17" Maximum Print Width
- 17" Maximum Die-Cut Width
- Run Speeds from 300 to 500 fpm
- 40" Unwind Capacity (Standard)
- 15" and 24" Maximum Print Repeat
- 3 Die-Cutting Positions
- 24" and 30" Rewind Capacity





Digital Technology

As the industry trend moves towards shorter and more customized label runs, **Western States** meets this demand through the innovative DT (Digital Technology) Label press. You will benefit by offering your customers small order quantities, 4-color process +white printing and unique shapes and designs. It is a flexible, economical way to get the labels you need while maintaining the quality you have come to expect.

- **No plates.** Standard plates and rotary dies on the DT press are replaced by software controls. This digitized process saves you the cost of a plate that is normally required for printing labels.
- **Laser die-cutting** technology means no dies or hard tooling is necessary. With laser die-cutting, this system can reproduce custom shapes and unique die-cuts easily, quickly and accurately without purchasing a costly die. By using the laser to cut in segments, the length is virtually unlimited. Order labels in the shape of your corporate logo instead of a plain rectangle die-cut. Be creative and have fun using this laser technology to design a shape that stands out and gets noticed!
- **No minimum quantities.** The no-plate digital technology is economical for even the smallest runs. It is also an ideal solution for multiple copies and customizing labels with text, barcodes, colors or personalized information. Costly prototypes or test runs can now be produced economically.
- The DT press has a digital inkjet system with 4-color process +white capable of printing full coverage and uses pigmented UV curable inks that have improved density, drying, light fastness, scratch and thermal properties. Spot colors are created in CMYK using the digital inkjet system. Most PMS colors can be recreated within an acceptable color range.
- No make-ready. The DT press is programmed to handle multiple jobs without missing a beat. It switches from one job to another with minimal waste or interruption, so there is no make-ready time between jobs.
- No worries about consistency. Since the equipment uses software for ink matching instead of traditional ink mixing, the DT press is able to sustain excellent print quality label after label, repeat after repeat.
- Prints on a variety of substrates at a rate of up to 120 feet per minute, and up to 13" wide with 8 levels of gray-scale for quality comparable to 150-lpi flexo screening.

Digital Printing Requirements:

- Custom die shapes must be submitted as an .eps vector file with art.
- Maximum length of a digital label must be matched with file size.
- Please check our web site at www.westernstatesenvelope.com or call for a specific DT check list.

DT Press Fact Sheet

Digital Technology

The DT Press. Solution based. Forward thinking label technology, years ahead of the competition.

Printing

- 4-color process +white
- Black
- Spot colors are created in CMYK. Most PMS colors can be recreated within an acceptable color range.

Inks

- UV Pigmented Inks
- Flexo inks
- Floodcoats

Coating

- Gloss UV Precoat
- Laminate

Run Speed

- Ink jet prints up to 120 fpm.
- Ink jet printing with laser die-cutting; the size and shape can greatly affect run speed.

Size

- Width: Maximum 9" wide with a print image of 8¼" when die-cutting and removing matrix.
- Length: Virtually unlimited when die-cutting with the laser. DT Press can print and laser cut in stages to create very long labels, banners, etc. Rewind and packaging options are limited on large, long products. Conventional tooling: 24" max repeat.

Shapes/Styles of Labels
Laser Die-Cut

- Custom shapes
- Ovals
- Circles
- Round Corner Rectangles
- Butt Cuts

Conventional Die-Cutting

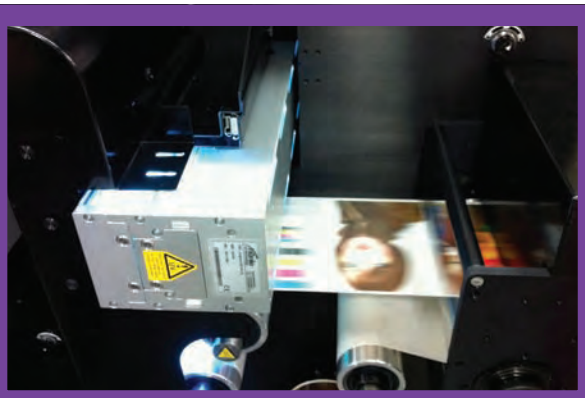
- Machine Applied
- Round Corner Rectangles
- Ovals
- Circles
- Butt Cuts
- Sheeted

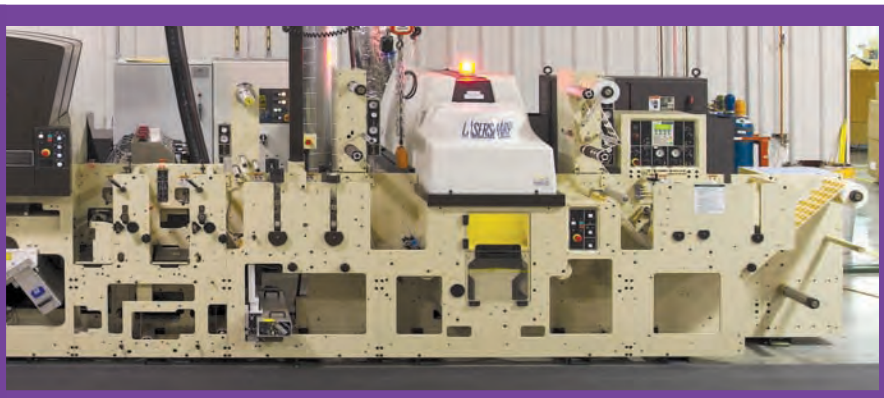
Conventional Tooling

Conventional 13" tooling can be purchased and used for projects that call for stocks unable to be laser die-cut. (Existing 7" dies are available for use, however, these dies are tooled for 7" presses and will affect the number of labels die-cut across the web.)

Digital Label Face Stocks

Prints Digitally = **P** Laser Die-Cut = **L** Conventional Die-Cut = **C**	P	L	C
White Semi-Gloss	✔	✔	
Polyolefin	✔	✔	
Fluorescent	✔	✔	
White Litho	✔	✔	
White High Gloss	✔	✔	
Gloss Blockout	✔	✔	
Thermal Transfer	✔	✔	
White Laser	✔	✔	
Bright Chrome Polyester	✔	✔	
Clear Polyolefin	✔	✔	
Vinyl	✔		✔
BOPP Polypropylene	✔		✔
Bright Silver	✔		✔
Dull Gold	✔		✔
White Wove/No Adhesive	✔		✔
8pt. and 12pt. Tag	✔		✔





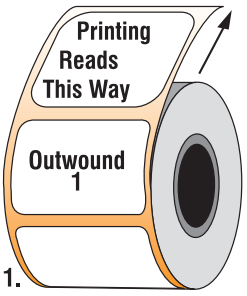
Label Rewind

After completion of printing and die-cutting, the converted label roll is taken from the press to the rewind department for finishing. In this department, the labels receive a final quality inspection where any labels that do not meet quality standards are removed. Electronic counters aid in rewinding the rolls to 1M, 500, 250, etc...whichever count is ordered.

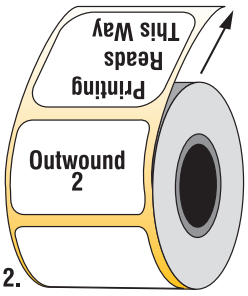
Rewind Chart

Printing Reads as Shown–Unwinding away from you–Looking at the printed side

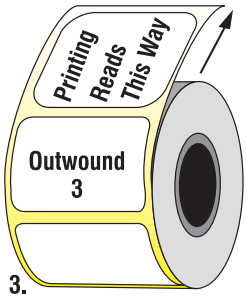
Outwound



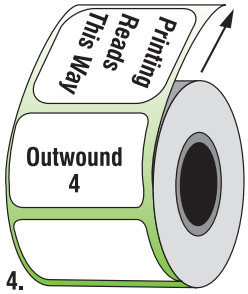
1. Copy printed ACROSS the roll. Top of label OFF FIRST.



2. Copy printed ACROSS the roll. Bottom of label OFF FIRST.

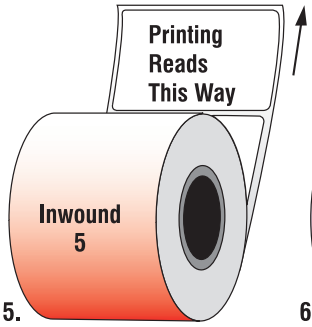


3. Copy printed around the roll. Right side of label OFF FIRST.

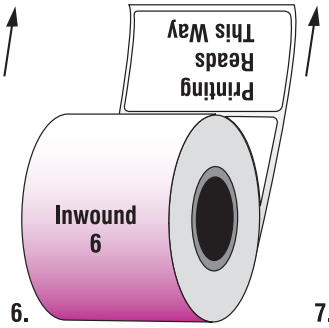


4. Copy printed around the roll. Left side of label OFF FIRST.

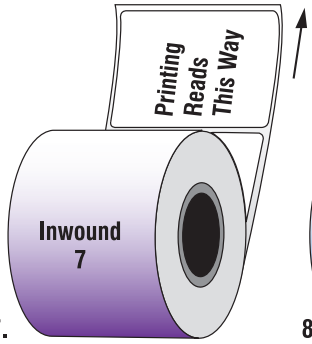
Inwound



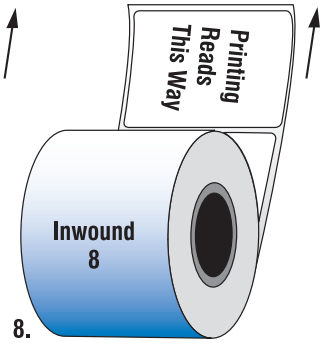
5. Copy printed ACROSS the roll. Top of label OFF FIRST.



6. Copy printed ACROSS the roll. Bottom of label OFF FIRST.

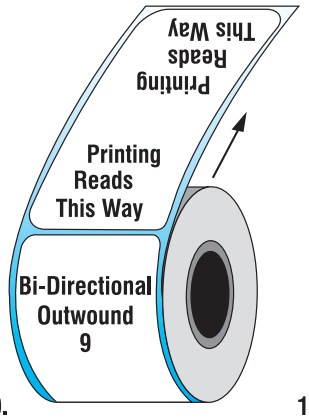


7. Copy printed AROUND the roll. Right side of label OFF FIRST.

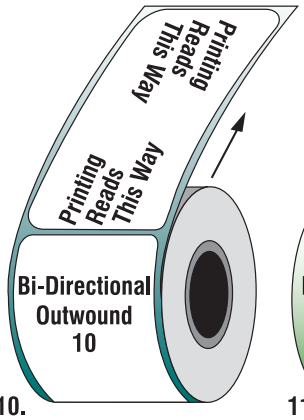


8. Copy printed AROUND the roll. Left side of label OFF FIRST.

Bi-Directional Outwound

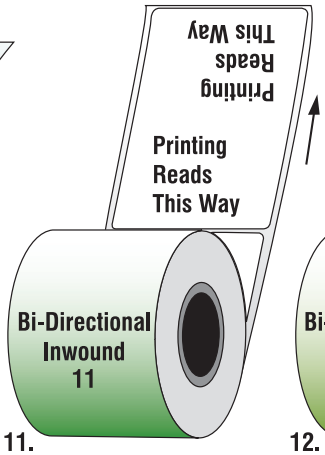


9. Copy printed OUTWOUND ACROSS the roll. Top or Bottom OFF FIRST.

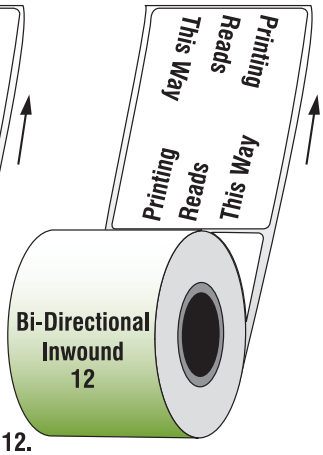


10. Copy printed OUTWOUND AROUND the roll. Left or Right OFF FIRST.

Bi-Directional Inwound

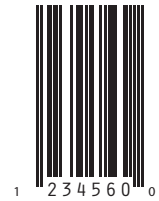


11. Copy printed INWOUND ACROSS the roll. Top or Bottom OFF FIRST.



12. Copy printed INWOUND AROUND the roll. Left or Right OFF FIRST.

Linear Barcode Comparison Chart

Symbol	Example	Character Set	Variable Length	Discrete/ Continuous	Check Character	Application
Code 39 ***USS-39***		A	Variable	Discrete	Optional	In very wide use for many types of applications: Logmars, HIBCC
Code 128 ***USS-128***		Subset A,B,C	Variable (Even # of Subset C)	Discrete	Required	Widely used; excellent for many applications
UPC-A		Numeric Only	12 Fixed (11 data+ 1 check digit)	Continuous	Required	Retail product marketing in USA and Canada
UPC-E		Numeric Only	7 Fixed (zero + 5 data +1 check digit)	Continuous	Required	Retail product marketing in USA and Canada; compressed for products with limited label space
EAN-13		Numeric Only	13 Fixed (12 data + 1 check digit)	Continuous	Required	Retail product marketing world-wide
EAN-8		Numeric Only	8 Fixed	Continuous	Required	Retail product marketing in USA and Canada; compressed for products with limited label space
Interleaved 2 of 5		Numeric Only	Variable (Even # of Digits)	Discrete	Optional	Very compact; encodes digits in pairs—total length must be even numbers of digits
ISBN		Numeric Only	Variable (Even # of Digits)	Discrete	Optional	Very compact; encodes digits in pairs—total length must be even numbers of digits

Notes: A=Caps and Special Non-Keyboard Codes + Numbers + Others
B=Upper & Lowercase + Numbers + Others
C=Numbers Only
Linear Barcodes can be scanned from either direction.

This code is hardly a secret. There's no need to crack it. In fact, it's commonplace in industries across Japan since it was created there in 1994. It's also widely popular in Europe. Now it's time to share this code's profit potential with your customers…

Sophisticated Features and Benefits

- QR Codes carry info horizontally and vertically, in approximately one-tenth the space of a traditional barcode.
- QR Codes can handle all types of data (numeric and alphabetic, symbols, binary, control codes, etc.) and up to 7,089 characters can be encoded in one symbol.
- A QR Code contains its own error correction data, internal orientation calibration and self-alignment markers, so it can be read from any angle or surface.
- There is no licensing fee to use QR codes and its technical specifications are a worldwide ISO-18004 standard.
- QR Codes are an instant, effective way to reach a target audience.
- They allow you to share printed and electronic material in the same application.

How it Works, How it's Used

A QR code is essentially a print-based hyperlink. Let's say a printed direct mail piece contains a QR code. By aiming a mobile phone or other camera-enabled mobile device with QR Code decoding software at the QR code, the recipient is now directed to a URL.

A QR Code can also contain a phone number, an SMS message, vCard data, 7,089 numeric or just plain 4,296 alphanumeric text. QR Codes add an effective interactive component to any marketing strategy. Here are a few ways your customers and their customers can benefit from using QR Codes:

- **Billing Statements:** Add QR Codes to statements for data collection or payment. Or use them in conjunction with a "Transpromo" concept (a combined transaction-based and promotional document).
- Dial an embedded phone number.
- **Surveys:** A user is directed to scan one.
- **Instant Link:** to download applications and content.
- **Identification:** Identify equipment, personal property.
- **Social Media:** With QR Codes, a printed piece (ad, direct mail postcard, etc.) also becomes an instant link to your social media pages (Twitter, Facebook, YouTube, MySpace). Send people to your Facebook page from a T-shirt. Send them to a video that you have created.
- **Print Ads:** QR Codes allow customers to purchase instantly while completely mobile. Also allows advertiser to capture data and create a measurable response mechanism. Track print based media effectiveness. Can be used for editorial reviews.
- **Catalogs:** Like an ad, QR Codes enable customers to make purchases instantly, which raises profitability and measurability for catalogers.
- **Nutritional Information:** Food wrappers and labels.
- **Event Promotion:** QR Codes enable invitees to sign up immediately for an event.
- **Direct Mail:** QR Codes allow you to capture personal, granular data so you can adjust campaigns and maximize response and ROI. Examples of how QR Codes can be used across all direct market segments:
  - **Fundraising:** Non-profits can use it to have supporters make donations instantly on-site by wearing a QR printed T-shirt.
  - **Branding:** The QR Code can be a direct link to a company's Facebook page where they can open dialogue between customers and the company.
  - **Viral:** Use mail with a coupon or special offer and embed the QR Code with a Tweet. Ask the customer to pass the offer on to friends/family; when they send it to all their Twitter subscribers, the offer's visibility grows exponentially.
  - **Transactional:** Place QR Codes on bills and give customers incentives for paying their bill immediately.

AB (Anti-Block) Coating: Is a coating applied to the non-release coated side of the liner to prevent ink transfer to the liner's backside. Generally used with film face materials or heavy adhesive coat weights.

Abrasion Resistance: The label surface's resistance to something that rubs against it, such as the label material itself, ink, or a protective coating.

Abrasiveness: The tendency of a paper, paper coating, or ink to dull die edges, slitting blades, and printing plates due to friction.

Accelerated Aging: Procedures for subjecting pressure sensitive label material to special environmental conditions in order to predict the course of natural aging.

Accelerator: A method used to speed up drying time, using either a solvent or placing a heater on the printed product.

Acetates: Transparent and cellulose films used as face material.

Acetone: A fast-drying solvent in the keytone family.

Across Web: The direction opposite the machine direction of the web.

Acrylic Adhesive: Pressure sensitive adhesive based on high-strength acrylic polymers. Can be coated as a solvent or emulsion system.

Acrylic Resins: Any of numerous thermoplastic polymers or copolymers of acrylic acid, used to produce paints, synthetic rubbers, and lightweight plastics (films).

Acrylic Emulsion: A water-based latex made with acrylic polymers, used in coatings and adhesives.

Adhesion/Adherence: A bond established upon contact between two surfaces.

Adhesive: A substance capable of holding materials together by surface attachment.

Adhesive/Aqueous: A water-based pressure sensitive adhesive.

Adhesive • Bleed: The adhesive migration from pressure sensitive material and labels. Note: especially critical in laser printing.

Adhesive • Cold Temperature: An adhesive that adheres to refrigerated substrates. Has an application range of 20° F and a service range of –65°F.

Adhesive Deposit/Residue: The pressure sensitive adhesive remaining on a substrate when a label is removed.

Adhesive • Dry Gum: An adhesive that adheres by getting it wet then applying it to the substrate.

Adhesive • Freezer Temperature: An adhesive that adheres to freezer substrates. Has an application range of 0° F and a service range of –65°F.

Adhesive • Heat Seal: An adhesive that has a coating that melts under heat to form the bonding agent.

Adhesive • High Temperature: An adhesive that withstands sustained, high temperatures (+200° F or higher).

Adhesive • Hot Melt: A pressure sensitive adhesive that is applied to the release liner at an elevated temperature, then cools into a conventional, highly-tacky pressure sensitive adhesive.

Adhesive • Opaque: A darkened adhesive that restricts printing from showing through the adhesive-coated side of a label.

Adhesive • Pattern Coated: Refers to the spacing arrangement of areas of adhesive on the face material that are coated parallel to the machine direction. Also referred to as dry lap, strip coated or zone coated adhesive.

Adhesive • Permanent: A pressure sensitive adhesive that has a relatively high ultimate adhesion to a wide variety of substrates. The label typically cannot be removed intact or requires a great deal of force to be removed.

Adhesive • Pressure Sensitive: A type of adhesive in which the dry form is aggressively tacky at room temperature. It has the capability of promoting a bond to dissimilar surfaces on contact with pressure.

Adhesive • Removable: A pressure sensitive adhesive that has a low ultimate adhesion. The label can be removed from most substrates without damaging the surface or leaving adhesive residue.

Adhesive • Rubber Based: A pressure sensitive adhesive derived from natural or synthetic rubbers.

Adhesive Splitting: A condition in which portions of pressure sensitive adhesive remain on the face material and portions remain on the substrate when the label is placed under stress or removed.

Adhesive Strike Through: When adhesive penetrates through the face material of a pressure sensitive lamination.

Adhesive • Water Based: A pressure sensitive adhesive derived from water-based materials.

Adhesive • Water Soluble: A pressure sensitive adhesive in which all components are water-soluble.

Age Resistance/Shelf Life: A label's resistance to deterioration from air, heat, moisture, light or chemical action.

Anchorage: The specific adhesion of a pressure sensitive material to a substrate.

Anchor Coat: A coating applied to the substrate to increase the adhesion of other coatings.

Anilox Line Screen: Dots per square inch on an Anilox Roll.

Anilox Roll: Ceramic or chrome plated steel rolls that have been engraved with cells that carry and transfer liquids, such as varnishes, adhesives, inks, scents, etc.

Anvil: A hardened steel roll that the bearers of a rotary die cutter ride, which also provides the hardened surface to support die-cutting.

Anvil Cut Labels: Pressure sensitive labels that are die-cut through all components of the label stock, including the liner. Also called steel-to-steel, zero-tolerance, punched out, or blanked out labels.

Application: 1) Placement of a label on a substrate. 2) The conditions under which a label is to be used; the life cycle of a label.

Application Temperature: Temperature of a label material at the time of application. All adhesives have a minimum application temperature rating. Testing is recommended in minimum and maximum application temperature situations.

Applicator: A device that automatically feeds and applies pressure sensitive labels to a substrate or product.

Backing: The carrier sheet of a material in pressure sensitive lamination as opposed to the face material. Usually has a release coating applied so that the adhesive will not stick too tightly to it. Also known as release liner, backing paper, carrier, etc.

Back Score: The liner is scored to facilitate its removal, normally down the center unless otherwise specified.

Back Splits: Linear cuts put in the liner during the coating process, or while on press, to meet specialized end-use requirements.

Bagginess: A slack, floppy area usually caused by gauge variation. The material has been stretched and is actually longer in that area.

Barcode/Barcode Symbol: A specific pattern made of lines (or bars) and spaces of varying width, which represents alpha or numeric data in machine-readable form. The most general format consists of a lead margin, a start character, data or message characters, a stop character, and a trailing margin.

Barrier Coat: A coating applied to a face material on the side opposite the printing surface, between the material and adhesive coat. It provides increased opacity to the face material, prevents adhesive migration, and improves anchorage of the adhesive to the face material.

Basis Weight: The weight in pounds of a ream of paper cut to a given size. Most backing papers used in pressure sensitive laminations are based on a ream size of 24" x 36"/500s. Face papers are typically 25" x 38"/500s.

Battery Label Stock: A durable, acid resistant label material designed for the demanding environment of automotive batteries.

Bearing Block: A device that holds the die in place in the die station.

Binder: An adhesive component in both paper and ink.

Bleed: When the printed image extends beyond the trim edge of the label.

Blister: A bubble that forms from gas or fluid that is trapped under a material's surface.

Blocking: Adhesion between sheets or rolls of pressure sensitive labels usually due to cold flow, improper drying of inks, or improper curing of coatings and adhesives.

Blown-On Labels: A method of label application that uses air pressure to remove the label from the carrier and position it on the substrate.

Blushing: Ink that is milky, foggy or flat in appearance. Usually caused by humidity in the air.

Bounce: Rational movement of the cylinders caused by compression.

Break: A tear in a roll of face material or release liner. Such defects are generally splices and marked by a flag during printing.

Breaking Strength: The measure of strength a product has.

Brightness: The (blue light) reflectivity of a sheet of paper measured under standard conditions on an instrument designed and calibrated specifically for that purpose.

Brilliancy: The brightness or intensity of a particular color.

Brittleness: That property of a material that causes it to break easily or fail when deformed by slight bending.

Bulk: Thickness of a sheet in relation to its weight. A bulky sheet would weigh less because it's lacking compactness.

Burster: A mechanical device used to separate cross-web perforations at intermediate locations between labels.

Bursting Strength: The pressure required to rupture a paper specimen when it's tested with a Mullen instrument under specific conditions. It's largely determined by the paper's tensile strength and extensibility. Also referred to as Mullen.

Butt-Cut Labels: Rectangular labels in continuous form separated by a single knife cut to the liner across the web. Also referred to as Kiss Cut Labels.

Butt Roll: A roll of pressure sensitive label stock that is very short in length.

Calender Finish: Applies to paper with a glazed surface finish created by calenders (cast iron rollers with chilled, hardened surfaces). Semi-gloss litho and high gloss paper are examples of calendered paper. Other terms include machine finish, English finish, super-calendered and calender friction glazed.

Caliper: A precision tool used to measure thickness, depth, inside diameter, and outside diameter. Measuring units are called mils or points.

Camera-Ready Art: Black and white or color-separated artwork supplied in its final form for printing preparation. Typically, it requires no modification other than photo enlargement or reduction.

Carrier: A paper or film that carries pressure sensitive labels. It typically has a silicone coating to allow easy label removal.

Cast Coated: A high-gloss enamel finish.

Cast-Coated Paper: A paper coating which is allowed to harden or set while in contact with a finishing surface. These papers generally have a high-gloss finish.

Cast Vinyl: Vinyl sheeting manufactured by coating a liquid vinyl acetate or similar ester onto a casting paper and curing it in a heated oven.

Catalyst: A substance used to accelerate the process between two or more other substrates.

Cavity: Usually refers to the engraving on a rotary die cutter that die-cuts a single shape.

Central Impression: A press with a number of printing units around a large cylinder that serves as the impression cylinder against which the substrate rides.

Chalking: A term which refers to the improper drying of ink. Pigments dust-off because the vehicle has been absorbed too rapidly into the paper.

Checking: The presence of hairline cracks in a varnish, lacquer or plastic coating.

Chemical Drum Label: A label of durable material (vinyl or polyester) that resists adverse conditions associated with chemical drum containers.

Chemical Resistance: The resistance of a pressure sensitive label to the deteriorating effects of chemicals, under specified conditions.

Chill Roll: Metal roll or drum cooled internally with water, etc. Often used after the press dryer to cool the printed web prior to die-cutting, rewinding, etc.

Chipboard: Paperboard of low quality.

Choke: A slight reduction of items from which color is knocked out of background.

Choke Roll: The background or overall pattern printing roll.

Clear Coat: A coating that protects the printing and surface of a pressure sensitive label from abrasion, sunlight, chemicals, moisture, or any combination of these. Varnish and lacquer are examples of clear coats.

Co-Adhesion: The ability of an adhesive to stick to itself.

Coated Paper: General term applying to all papers that have been surface coated with pigments.

Coating: In printing, an emulsion, varnish or lacquer applied in-line or off-line, often over a printed surface to give it added protection.

Coat Weight: The amount of weight per unit area of coating. This is expressed in various units including grams per square meter or pounds per ream. Applies to adhesives, primers, varnishes or lacquers.

Co-Extrusions: Film produced by more than one extruder through a common die. Films have been made with as many as 13 layers.

Cohesion: The internal strength of a pressure sensitive adhesive, its resistance to cold flow, and its resistance to failure (or splitting) when labels are removed or placed under stress.

Cohesive Failure: The breakdown of molecular bond by which particles of a body, or bodies, are united.

Cohesive Strength: The internal strength of the adhesive. The measure of a label's resistance to removal.

Cold Flow: Steady deformation of a pressure sensitive adhesive under stress.

Color Comprehensive: Artwork that provides all the elements of the finished product (size, layout, color, copy, etc.).

Colorfastness: The ability of a pressure sensitive label to retain its true color under normal conditions and/or to resist change in color when exposed to light, heat, or other influences.

Color Overlap: When one color is slightly covering another.

Color Proof: A printed copy of the artwork that gives a simulated impression of the final product.

Color Separation: The process of separating a color image into its individual printing colors.

Color Stations: The sets of rollers for each individual color on a press.

Combination Plate: Plate that has both lines and halftones on one plate.

Composite Art: Black and white where all colors are illustrated on one piece of paper and not color separated.

Computer Imprintable Labels: Typically preprinted or imprinted utilitarian labels carrying variable information, such as a barcode and price.

Conditioning: The process of subjecting a material to specific temperatures and relative humidity conditions for a stipulated period of time.

Conformability: The ability of a pressure sensitive label to yield to the contours of a curved or textured surface.

Continuous Label: Fan-folded labels manufactured from a continuous web of label stock that's not cut into units before execution; mostly used for data processing applications.

Converter: Refers to the type of manufacturer who produces plain or printed rolls, sheets, bags or pouches, etc. from rolls of film, foil or paper, including pressure sensitives.

Copier Label: A label designed for overprinting by a plain paper photocopier.

Copy: All materials needed to reproduce final printed product, including art and text.

Core/Core Size: The inside diameter of the (cardboard) core in a roll of labels.

Corner Radius: The arc or curve where the die blades meet so they can impart a rounded corner to a die-cut label.

Corona Treated: An electrical discharge which is used to raise the critical surface tension of low or inert substrates thereby enhancing printability.

Coupon Base: The clear base in a dry peel label construction, usually used for instantly redeemable coupons. When the printed face material (coupon) is removed, the clear base remains on the substrate.

Crash: Double outline or halo effect that occurs when there's a heavy impression of plate to stock or transfer roll to plate.

Crazing: The network of small cracks that can appear in a varnish coat or plastic face material, usually caused by expansion and contraction during weathering or excessive solvents in an ink system.

Creep: The lateral movement of a pressure sensitive label on a surface due to low cohesive strength.

Cropping: Cutting off unwanted areas of any artwork or photograph.

Cross-Direction/Cross-Web: The direction perpendicular to the machine direction in the plane of a printing material.

Crush Cut: A cut made by a rotary blade in contact with an anvil or base roll.

Cure: The process of treating plates with heat to make them infusible.

Curl: The tendency of paper to bend or warp, either by itself or because of a coating or laminate.

Curve Direction: The direction of the web on the press.

Cut: To thin any liquid.

Cut-Off: In web printing, the cut or print length corresponding to the circumference of the plate cylinder and/or die cutter; repeat length.

Cut Rule: Steel rule blades designed to cut material being produced on flatbed die-cutting equipment.

Cylinder: In flexography, the roller on the press in which rubber plates are mounted, and the one that receives the impression. Also referred to as the plate cylinder or impression cylinder.

Deboss: Condition in which an image is depressed below the normal surface of a material. Embossing has the opposite effect, creating a raised image.

Deflection: Occurs when the fountain roll pressure against the anilox roll causes both to bend or bow; can cause non-uniformed printing.

Declamation: Following application to a substrate, the separation of a pressure sensitive material into layers in a direction approximately parallel to the surface.

Destaticization: Treating plastic materials to minimize their accumulation of static electricity.

Destructable Label: A pressure sensitive construction made with a weak face material so that (attempted) removal of the label usually results in its destruction.

Die: The tool or device used for imparting or cutting a desired shape, form or finish from a given material.

Die Adapter: A device used to modify a die station of one press so that it will accommodate dies originally designed to be used on different presses.

Die Blades: Sharpened, thin steel blades used in flat or rotary dies. Also refers to blades on machine engraved or EDM manufactured rotary dies.

Die-Cut: The actual shape of a pressure sensitive label made by the cutting edge of a die.

Die Life: Number of impressions expected from a new die and expected following a re-sharpening of a die.

Die Lines: A hand drawn or computer generated layout of the die-cut shape or shapes on a clear matte finish acetate.

Die Stain: A process used to check die-cutting accuracy.

Dimensional Stability: A material's ability to retain (or recall) its original shape or state.

Direct Thermal Printing: Specialized printing that uses rapidly heated pins that selectively activates a heat-sensitive coating inherent in the face material, thus forming the desired copy or images.

Dispenser: A device that feeds pressure sensitive labels, either manually or automatically, in pre-printed units.

Dispensing Edge: A relatively sharp edge around which a backing material is pulled in order to dispense a pressure sensitive label from that backing.

Distorted: Intentionally shrinking artwork a particular way to compensate for stretching of plates on press.

Doctor Blade: A thin, flexible blade used to scrape off excess ink on an anilox roll.

Doctor Roll: The fountain roll on a flexographic press.

Dot: Many individual dots make up a halftone.

Dot Matrix Printing: An economic and versatile method of printing that produces images by printing tiny ink dots closely together.

Double-Coated: A pressure sensitive product consisting of a face material with similar or dissimilar adhesives applied to both sides of the material.

D.P.I.: Dots per inch; a measure referring to dot resolution in images created by dot matrix, laser and thermal printers and imprinters.

Drawdown: A swatch of color or coating used for testing; created by spreading a couple drops of ink or varnish across a sheet of stock.

Driving Side: The side of a flexographic press on which the main gear train(s) are located. Also gear side; opposite of operator side.

Dropout: When the extreme highlight of a halftone has been removed.

Dry Peel: A label construction in which two materials are bonded together with a dry adhesive. A common use for this label construction is for instantly redeemable coupons or for promotions.

Dry Tag: An uncoated tag face material designed to separate from a liner, with no functional adhesive on the tag. Typical uses are clothing tags, temporary ID cards and hang tags.

Duo-Imaging Material: A specifically-coated, pressure-activated liner that reproduces an exact image of information printed or imprinted on its corresponding face label.

Dwell/Dwell Time: The time during which a pressure sensitive material remains on a surface before testing for adhesive permanence or removability.

Edge Lift: The tendency of the edge of a label to rise off the substrate.

EDP (Electronic Data Process): Data processing by electronic equipment. Pressure sensitive labels produced from imprinting on this equipment incorporate in-line hole punching.

Electrostatic Printing: A method of printing in which the ink is affixed to the face material by electrostatic methods.

Elmendorf Test: A standard test for determining the tearing strength of paper.

Elongation: The increase in length of a material produced by extending it to the point of rupture.

Emboss: A condition in which an image is pressed into a material to create an image that is raised above the normal level of the material. Debossing creates the opposite effect.

Emulsion System: A dispersion of fine particles or globules in another liquid. Many pressure sensitive adhesives are emulsion adhesives.

Encapsulated Ink: Ink encapsulated in a material surface coating that can be activated by heat or pressure.

Exposure Temperature: The temperature to which a label product is exposed.

Face Cut Label: A die-cut or square cut label from which the matrix, or waste between labels, has not been removed.

Face Material/Face Stock: Any paper, film, fabric, foil or plastic material suitable for converting into pressure sensitive labels. As a functional part of the construction, the face material is bonded to an adhesive layer and carried on a liner.

Face Slit: A slit in the face material of a pressure sensitive product to facilitate removal from the backing.

Face Split: A linear cut in the face material during coating or converting to meet specialized end use requirements.

Fade: A gradual decrease in brilliance of color; often applies to the change in color produced by prolonged exposure to light.

Fan-folded Labels: Pressure sensitive labels on a continuous backing that is perforated, then folded back and forth along the perforations, so as to create a flat pack.

Feathering: A defect in printing characterized by ragged, uneven or coarse edges.

Feed Slots: Round or rectangular holes punched into the edge of a liner to maintain the register of computer imprintable pressure sensitive labels during imprinting.

Fill In: Halftones or small type filled in by ink.

Film: Plastic face material manufactured from synthetic high molecular weight polymers (i.e. polyester, polyethylene, vinyl).

Finish: The surface property of a paper sheet determined by its surface contour and gloss. Examples of finish terms include: antique, vellum, machine, English, eggshell, plate and super-calendered.

Flag: A marker, usually made of strips of colored paper, placed in rolls of pressure sensitive materials during printing or converting to designate a deviation from a standard (i.e. splice, defect or specification change).

Flexibility: A property of face material, measured under specified conditions that indicates how readily it will conform to curved surfaces.

Flexography: A rotary web letterpress method of printing characterized by raised-image, flexible photopolymer rubber plates and fast-drying inks.

Fluorescent Paper: A paper coated with a pigment that reflects light in such a way that it has a glowing appearance or effect.

Foil: A thin metal sheet used as a face material.

Foil Paper Laminate: A face material consisting of metal foil laminated to paper. The foil usually carries a clear coat to improve ink receptivity.

Food Contact Adhesives: Adhesives meeting specified sections of FDA's Code of Federal Regulations. Special product recommendations are necessary for specific applications.

Font: All characters of particular type.

Four Color Process Printing: Printing and reproduction of full color images using the four process printing colors (yellow, cyan, magenta, black) to create an image with an indefinite number of colors.

Frozen Edge: The inability to separate a pressure sensitive label from its liner along one edge. This is generally caused by an absence of silicone on that edge.

Gear Marks/Streaks: A defect in flexographic printing. Parallel streaks appear across the printed web at the same interval as the gear teeth on a cylinder.

Ghosting: Indistinct image patterns appearing as solids or reverse printing, typically caused by poor ink distribution, inconsistency in plate and/or substrate thickness, or poor ink formulation.

Ghost Printing: Involves the use of a low-density screen to print a ghost-like background image.

Gloss: Characteristic of the surface that causes it to reflect light at a given angle.

Grain: In papermaking, the direction in which most fibers lie and align with the direction the paper travels through the paper machine.

Guillotine: Label parts cut into individual pieces with equipment that uses a large blade to cut to the final shape. Similar to sheared, but multiple sheets are cut with greater speeds and accuracy due to the automated nature of the equipment.

Halftone: A method of screening a continuous tone image (like a photograph) for printing or reproduction. Dots in the screen vary in size and density in order to recreate the complete range of highlights, lowlights and mid-tones of the original image.

Halos: Lines around print caused by excessive ink and excessive plate impression.

Hang Tag: Fold-over labels generally used for product identification. These products usually "hang" in a retail setting.

Hand Marking: A method of imprinting on labels in which a pen or other writing utensil will be used to write on the label's face.

Heat Seal Labels: Label paper that has a coating that melts under heat to form the bonding agent.

Heavy Coat Weight: A higher-than-standard weight of coating per unit area.

Helium Neon Laser: The type of laser most commonly used in barcode scanners.

Hickey: A piece of foreign matter in paper; a burr or defect on the printing plate.

High Gloss Paper: A cast-coated gloss paper that features high strength material and excellent ink receptivity.

High Surface Energy: Surfaces and materials that have a greater molecular attraction to adhesives. On a smooth/clean high energy surface, the adhesive can flow (or "wet-out") to insure a stronger bond.

Holding Power: The ability to withstand stress, involving both adhesive and cohesive strength. Refers to rigid label materials on small diameter cylindrical objects.

Hologram: The pattern on a photo-sensitive material or embossed into a polymeric film structure resulting from an interference pattern created by a laser light striking an object, then merging with a reference beam of the same light.

Horizontal Spaces: The space treated by the removed matrix, revealing only the liner in a pressure sensitive label construction.

Hot Melt Adhesives: Thermoplastic materials with 100% solids that liquefy when heated and resolidify on cooling to form a bond with the face sheet and a pressure sensitive lamination which includes a release coated backing sheet.

ID: Inside diameter.

Idler Rolls: Roller mechanisms on converting machines used to support, smooth or direct the web in its course of travel through a machine not driven.

Image Areas: The portions of the printing plate that pop up and print the ink on the substrate.

Impact Printing: A method that uses pressure to transfer the pigment on a ribbon to the substrate (i.e. dot matrix, typewriter, etc.). Thermal transfer printing, which offers more flexibility and printing options, is phasing out this method.

Impression: The image transferred from the printing plate to the substrate or the adjustment required to affect the same.

Impression Cylinder: In printing, the cylinder on a printing press over which the material feeds to pick up the impression from the inked plate.

Imprinting: Technique in which copy is applied to blank or previously printed labels with a secondary printing device such as an imprinter or computer printer.

Inching: To run a press for very short increments of web travel.

Ink Jet Printing: A non-impact printing process whereby fluid ink is projected from a nozzle directly onto a material to form the desired image.

In-Line Press: A press coupled to another operation such as sheeting, die-cutting, creasing, etc.

Inverted Face Material: A face stock that has the adhesive applied to the surface normally printed upon.

Jog: Another word for inching: To run a press for very short increments of web travel.

Justify: To arrange copy so that it lines up vertically on the left, right or both sides.

Key Line: In artwork, an outline drawing of finished art for labels to indicate the exact shape, position and size for all elements.

Key Plate: The plate in which all other plates are lined up to.

Kiss Cut: A die-cutting operation that cuts through the face sheet to a liner but not through the liner.

Knife-Cut Labels: Rectangular labels in continuous form separated by a single knife cut to the liner across the web.

Knockout: A color area that has been removed so another color can be printed in that area. This keeps the first layer of ink from overprinting the other.

Kromecote: A highly polished finish on paper.

Label: The functional part of a pressure sensitive construction comprised of the face material and adhesive, cut into various shapes.

Label Height/Length: The vertical measurement of a label (from top to bottom) when the label is traveling in the machine direction.

Label Stock: Pressure sensitive laminate from which labels are produced; usually refers to roll stock.

Label Width: The horizontal measurement of a label (from side to side) when the label is traveling in the machine direction.

Lacquer: A coating applied to a face material for protection or decoration; usually requires ultraviolet curing or drying.

Ladder: The face material and adhesive layers of a pressure sensitive construction surrounding a die-cut label which is typically removed after die-cutting.

Laminate: A web material formed by bonding two or more materials.

Laser Printing: Also know as electrostatic printing, a process where light, generated from either a laser or diode, creates a static charge on a photographically-sensitive cylinder. This charged cylinder attracts toner, which is then transferred to a printable surface, creating an image.

Laser Cut: Equipment using laser technology to cut labels; used often for small production quantities.

Latex Paper/Latex-Impregnated Paper: Paper saturated with latex during its formation making it stronger, more resistant to moisture and abrasion, more flexible and more durable.

Leading: Measured in points, it's the vertical space between two lines of type.

Legging/Legs: The stringy appearance of adhesive when a pressure sensitive label is separated from a substrate or its release liner. Can also occur when the matrix is removed from the die-cut pressure sensitive material.

Life Cycle: The length of time that a label is to be used before it's ultimately discarded.

Lift Tab: A label edge that is not coated with adhesive to allow for easy removal of the label from the release liner. Is frequently used for order picking labels and instantly redeemable coupons.

Line Art: Black and white artwork that can be reproduced as is.

Liner: A paper or film that is a carrier for pressure sensitive labels. Typically, it has a silicone coating to allow for easy label removal.

Litho: A paper with a satin finish between high gloss and dull finish that's ideal for barcode printing.

Low Surface Energy: Surfaces and materials that resist adhesion. Teflon has the least amount of surface energy of all plastics in use today. Similarly, textured surfaces require higher adhesive coat weights to fill the crevices in the uneven surface.

Machine Direction: The direction of paper in its forward movement through a paper handling machine or printing press.

Machine Finish: A term applied to a paper with a glazed surface finish created by means of calenders (cast iron rollers with chilled, hardened surfaces).

Machine Readable: Refers to the scanning of barcode symbols by a laser scanner or similar device.

Magnetic Cylinder: A cylinder used in die-cutting that is magnetized to accept and hold in place flexible steel dies. Also used for metal-backed printing plates.

Magnetic Die: A thin, flexible steel cutting plate that is held onto a base cylinder magnetically.

Make-Ready: On printing presses, all operations before production, such as mounting plates; adjusting the feed-in, edge guide; putting ink in the fountain, etc.

Mandrel: A shaft upon which cylinders, or other devices, are mounted or affixed. Also unwind or rewind shaft onto which rolls of material (or labels) are mounted.

Master Roll: A full width roll that has finished the primary manufacturing process and is usually untrimmed and unslit.

Material Splice: An area where tape has been used to attach two rolls of material together to form one continuous web.

Matrix (waste skeleton): The face material and adhesive layers of a pressure sensitive construction surrounding a die-cut label which is typically removed after die-cutting.

Matte Finish: A low-gloss or non-gloss finish. A UV-curable clear coat may also be used to produce a matte or textured finish.

Memory: The property of a material that causes it to shrink or return to its original dimensions after being distorted, die-cut, or subjected to temperature change.

Metal Foil: Thin, flexible layer of metal, such as aluminum, used as face material. Thinner gauges are often laminated to paper for strength.

Metallized Film: A plastic or resinous film that's been coated on one side with a very thin layer of metal.

Metallized Paper: Paper that has a thick deposit of metallized particles that resemble a layer of foil. Metallized paper offers reduced stiffness and better flexibility than metallized film, and has an appearance similar to laminated foil papers.

Moiré: An undesirable pattern that occurs when screens are out of register or the wrong screen is used.

Moisture Content: The moisture in a material; is particularly important in liners.

Moisture Equilibrium: The condition reached by a material when it shows no change in weight, in relation to the amount of moisture absorbed by the material.

Moisture-Proof: The property of a material which makes it virtually impervious to moisture.

Molted Surfaced/Molting: Non-uniform appearance of coloring of a face material; blotching.

Mounting: Placing the plates on the cylinders so that the colors line up correctly.

MSI: (Thousand square inches) The standard unit for pricing and purchasing roll stock in the pressure sensitive industry.

$$\textbf{MSI Formula:}\ \frac{\text{Width (of roll)} \times \text{Length (of roll)} \times 12}{1000}$$

Multiple-Web Construction: A construction consisting of two or more face materials and/or adhesives on the same liner.

Mylar: Dupont's trademark for clear, tough polymeric polyester film.

Natural Aging: The change, if any, in a material occurring from exposure to normal environmental conditions.

Negative: A photographic image of originals on paper, film or glass in reverse from that of the original copy. Dark areas appear light and vice versa.

OD: Outside diameter of a cylinder, core, roller or roll of labels.

Offset/Offsetting: The partial transference of ink from a freshly printed surface to an adjacent surface, as that of another sheet of paper.

Ooze: Adhesive moving out of ends of rolls or stacks of sheets causing ends to feel sticky and possibly causing material to block adhesive cold flow.

Opacity: The measurement of the amount of light that can pass through a material.

Opaque Ink: An ink that's not transparent and reflects only its color regardless of what color overprints.

Operating Side: The side of a label press on which printing unit adjustments are located; opposite of driving side or gear side.

Orange Peel: The textured appearance of a label that can occur from air bubbles trapped between a laminate and face material.

Orientation: Applies to roll label formats and is used to describe the direction of the label copy as it comes off the roll. The orientation of the die and the way the artwork is created determine this direction.

Overcoat: A coating that protects the printing and the surface of a pressure sensitive label from abrasion, sunlight, chemicals, moisture or any combination of these.

Overlaminate: the application of a clear film to label material to protect or enhance visual quality.

Overlay: Transparent sheet attached to the artwork to indicate color separation or any changes.

Overprint: Printing of one color over another.

Pattern Adhesive: In the case of screen-printed products, a double adhesive is die-cut to a specific shape that coincides with an overlay or nameplate design.

Peel Adhesion: The force required to remove a pressure sensitive label from a standard test surface at a specified angle and speed after the label has been applied according to specified conditions.

Penetration: The change in appearance of the face material due to movement of one or more components from the adhesive or the substrate.

Permanency: The measure of an adhesive's ultimate holding power or bonding strength.

Permanent Adhesive: An adhesive characterized by having relatively high ultimate adhesion to a wide variety of surfaces.

Photopolymer: Plate material that is photosensitive and upon exposure, its compounds polymerize to form a tough, abrasion-resistant surface which becomes the inking media.

Pica: A unit of type measure; 1/6 of an inch. One pica equals 12 points; 72 points equals one inch.

Picket Fence: A barcode symbol characterized by vertical bars and spaces.

Piggyback: A pressure sensitive label on a pressure sensitive liner. The double-ply label is carried on a standard release liner. Once the double-ply is applied to a substrate, the top ply can be removed and applied to yet another substrate.

Pinch Roll: Line of contact between two rolls. Often referred to as the pull or draw rolls of a web press.

Pin-Fed Holes: Round or rectangular holes punched into the edge of a liner to maintain the register of computer imprintable pressure sensitive labels during printing.

Pinholing: Unwanted holes in the printed areas.

Pitch Diameter: The measurement of a gear or cylinder, determined by dividing the circumference by Pi (3.1416).

Plasticizer: A substance added to plastics or other materials to make them more pliable.

Plasticizer Migration: The movement of plasticizers from a plastic into an adhesive, face material or both. This can cause degradation of the adhesive and bleed-through of adhesive components into the face material.

Plate: The image carrier in letterpress and flexographic printing.

Polyester: A strong film that is resistant to moisture, solvents, oils and chemicals. It's usually transparent, but is available with a metallized finish.

Polyethylene: A tough, stretchy film that's suitable for use in low temperature applications. It's frequently used for labeling semi-rigid bottles.

Polymer: A compound formed by the reaction of simple molecules called monomers, having functional groups that permit their combination to proceed to high molecular weights under suitable conditions.

Polypropylene: Similar to polyethylene but stronger and has a higher temperature resistance. Used in various thicknesses for printing labels, as well as for backing or liner materials.

Polystyrene: Thermoplastic produced by the polymerization of styrene. The electrical insulating properties are outstanding and this material is relatively unaffected by moisture.

Press Proofing: Checking the printed product before the production is made.

Pressure Sensitive Label: A self-adhesive label that is the usable part of a pressure sensitive material.

Pressure Sensitive Material/Stock: The combination of face material, pressure sensitive adhesive and release liner from which pressure sensitive labels are manufactured. Typically referred to as a "sandwich."

Pressure Sensitive Tape: A combination of a pressure sensitive adhesive with a carrier. Tapes are either self-wound or use release liners or films.

Price Mark Labels: Labels for retail and/or wholesale use that normally carry alpha or numeric character information such as unit price, lot number, style number, and SKU number.

Prime/Primary Label: Usually a descriptive, decorative product label; the label is typically on the front of the container.

Primer: A coating applied to face material, on the side opposite the printing surface, to improve anchorage of the adhesive and to prevent migration of adhesive components into face material.

Print Resolution: The quality of print; the level of detail achieved by a printer. Measured in dpi (dots per inch), typical capabilities are 200 dpi for a thermal transfer printer and 300 dpi for a laser printer.

Process Colors: Colors that are created by mixing halftones of the four process colors (cyan, magenta, yellow and black).

Protective Coating: A coating that protects the printing surface of a pressure sensitive label from abrasion, sunlight, chemicals and moisture, or a combination of these.

Pull Tab: Area on a face stock that facilitates easy removal of the label, usually a cut area on a sheet label. Also called a peel or tear tab.

Punched Out Labels: Anvil cut or sheeted labels.

Quick Adhesive: The property of a pressure sensitive label that causes it to adhere to a surface instantly with minimal pressure and contact time.

Read Both Ways: When the label copy appears on both sides of the part; copy can also be read from the non-adhesive side.

Ream: A number of sheets of paper, either 480 or 500, according to grade. For purposes of physical testing, a ream is considered 500 sheets.

Registration Marks: Symbols attached to original copy prior to photography, used for positioning films in register, or registering two or more colors when printing.

Release Agents: A lubricant used in molds to assist in releasing molded parts.

Release Coat: The (silicone) coating on a liner that allows pressure sensitive labels to be easily removed or dispensed.

Release Coating–Patterned: Selectively applying release coat beside non-coated areas, in strips that run parallel to the machine direction. Results in a permanent face material/release liner bond in the non-coated areas.

Release Coat Transfer: A defect resulting from the transfer of the release coat from the liner, to the pressure sensitive adhesive during release.

Release Liner: The component of the pressure sensitive label material that functions as a carrier for the pressure sensitive label. Usually silicone coated, it readily separates from the label when the label is removed for application.

Removability: A relative term applied to pressure sensitive labels to describe the force or condition under which they can be removed from a substrate.

Removable Adhesive: A pressure sensitive adhesive characterized by low ultimate adhesion and clean removability from a wide variety of surfaces.

Repeat: The printing length of a plate cylinder, determined by one revolution of the plate cylinder gear.

Residence Time: The time during which a pressure sensitive material remains on a surface before testing for adhesive permanence or removability.

Resolution: Measured in dpi (dots per inch), typical capabilities are 200 dpi for a thermal transfer printer and 300 dpi for a laser printer.

Rewind: After printing the roll, it's wound up to the original unprinted form.

Roll Fed Laser: A method of imprinting on labels using continuous form printing and laser imaging.

Roll Labels: Pressure sensitive labels that are packaged in continuous roll form.

Roll-To-Roll: A method of running materials through a printing machine. A roll of material is fed into a printing unit, is printed, and then is rewound into a roll as it exits the machine.

Roll-To-Sheet: A method of running materials through a printing

machine. A roll of material is fed into a printing unit, is printed, and then is sheeted as it exits the machine.

Rubber-Base Adhesives: Pressure sensitive adhesive based on natural or synthetic rubber. Can be coated as a solvent, hot melt or emulsion system.

Running Register: The control on a flexographic press that accurately positions, while in the run mode, the printing of each color station in the direction of the web. Also called circumferential register or longitudinal register.

Sandwich: Colloquial term for the layered construction of pressure sensitive material.

Satin Finish: Smooth finish.

Saturated Paper: Paper saturated with latex during its formation to make it stronger, more resistant to moisture and abrasion, more flexible and more durable.

Scanability: The quality of a material that allows for precise printing of barcodes, so as to ensure accurate reading or scanning of the barcode data.

Score: To make an impression or a partial cut in a material to allow for bending, creasing, folding or treating.

Screen Build: When a color is created or built by mixing halftone screens with the four-color process colors (cyan, magenta, yellow and black).

Scribe Lines: Evenly spaced lines found on the plate cylinder to aid in mounting rubber plates.

Sealer Coat: A coating applied to face material, on the side opposite the printing surface, to improve anchorage of the adhesive and to prevent migration of adhesive components into face material.

Self-Adhesive Label: The combination of face material, pressure sensitive adhesive and release liner to make pressure sensitive labels.

Self-Imaging Liner: A specially coated, pressure-activated liner that reproduces an exact image of information printed or imprinted on its corresponding face label. Requires an impact printing method.

Self-Imaging Piggyback: A piggyback label material that can be imprinted, creating a duplicate from the second ply of this double-ply construction. Requires an impact printing method.

Self-Wound: A roll of material with a single liner that's coated on both sides with a release coating and a carrier having a pressure sensitive adhesive on both sides. Also a material that has pressure sensitive adhesive applied to one side and then rolled up onto itself (no liner).

Semi-Gloss: Coated one side litho.

Serif: The strokes at the ends of Roman Letters.

Shadows: Indistinct image patterns appearing as solids or reverse printing, typically caused by poor ink distribution, inconsistency in plate and/or substrate thickness, and/or poor base ink formulation.

Shear Cut: A cut of a continuous web of stock using an action similar to the action of scissors.

Sheet Fed Laser: An imprinting method in which a standard desktop printer is used to print data on a label's surface.

Sheeted Labels: Finished labels furnished in cut, singular sheets. This format is most popular for laser printing.

Shelf Life: The period of time a product can be stored under specified conditions and still remain suitable for use; normally 6–9 months.

Silicone Polymer: A polymer of organo-siloxane used as an ink additive to help ink flow out. Also used for pressure sensitive adhesives capable of withstanding extreme temperatures. This polymer has exceptionally high repellency properties towards adhesives used in extensively in the coating of release liners.

Silicone Coating: A unique polymer system that can be a very effective release coating.

Skeleton: The face material and adhesive layers of a pressure sensitive construction surrounding a die-cut label; it's typically removed after die-cutting.

Slit Back: Slits in the release liner of a pressure sensitive label to facilitate its removal by hand.

Slit Face: Slits in the face material of a pressure sensitive product usually for facilitating removal.

Slitter: Blades that cut stock in the long direction—razor blade slitter, shear slitter or score cutter.

Smudge Resistance: The quality of paper or plastic to resist smearing of ink immediately following printing or imprinting; directly related to the absorption level of the paper.

Specific Adhesion: The force required to remove a pressure sensitive label from a specific substrate under specified conditions.

Splice: A method of joining paper or plastic webs within a pressure sensitive roll to produce an operational continuous web.

Split Back/Split Liner: Slits in the release liner of a pressure sensitive label to facilitate its removal by hand.

Split Face: Slits in face material of a pressure sensitive product usually for facilitating removal.

Spot Color: Requires separate plates made for each color being produced.

Spread: A slightly enlargement of color or image so that it overlaps another color when printed.

Stacker: A device in the take-off end of a press that automatically stacks sheeted labels.

Static Cling Label: A label that adheres to a substrate by static electricity—no adhesive is necessary.

Steel-To-Steel: Pressure sensitive labels that are die-cut through all components of the label stock, including the liner. Also called anvil cut, zero tolerance, punched out, or blanked out labels.

Step and Repeat: Copying the same image with exact spacing to fit the die.

Stepped Anvil: An anvil that has had either the bearer or body area reduced in order for die blades to cut a different depth than originally intended.

Stickyback: Double-faced adhesive coated material used for mounting printing plates to the plate cylinder.

Storage Life: The period of time a product can be stored under specified conditions and still remain suitable for use; normally 6–9 months.

Stretch: The increase in length of a material produced by extending it to the point of rupture.

Stub Roll: A roll of pressure sensitive label stock that is very short in length.

Sub Surface: The printing is done on the backside of a clear material (not on the face) to make the label more abrasion-resistant.

Substrate: The surface to which a pressure sensitive label is applied or adhered.

Sunlight Resistance: The ability of a material to resist the deteriorating effects of sunlight, especially ultraviolet and infrared wavelengths. Also referred to as being "fast to light."

Super-Calendered: In papermaking, a calendar stack, separate from the papermaking machine, with alternate metal and resilient rolls, used to produce a high finish on paper.

Surface Energy: The interaction between the forces of cohesion and the forces of adhesion between unlike materials. Higher surface energy equals greater attraction. Lower surface energy equals weaker attractive force.

Tack: The property of a pressure sensitive label, which causes it to adhere to a surface instantly with minimal pressure and contact time (as measured by TLMI Tester or equivalent equipment).

Tamper-Resistant Label: A pressure sensitive construction made with a weak face material so that (attempted) removal of the label usually results in its destruction.

Tear-Strength: The force required to tear a label specimen under standardized conditions using an instrument designed to simulate the tearing encountered under general use conditions.

Tear Tab: An additional area of face material, next to the release liner of a pressure sensitive label produced in single form to facilitate removal of the release liner.

Tensile Strength: The force parallel to the plane of an applied label required to break given width and length of paper under specified conditions.

Tension: The mechanical control of unwinding or rewinding paper, film, foil and other roll materials. The stress caused by a force operating to extend, stretch or pull apart.

Thermal Die-Cut: A process using heat and pressure to "kiss cut" pressure sensitive materials.

Thermal Transfer Printing: An imprinting method that uses heat and pressure to melt a wax or resin based ink onto a label.

Thickness: How a sheet of paper or plastic is measured in units of one thousandth of an inch; the measuring units are called mils or points.

Tipped-On Labels: A method of label application in which the carrier is peeled back and labels fall or "tip" onto the substrate.

Tooling: Usually refers to die cutters, butt cutters, etc. used to cut out the labels.

Tooth Count: Refers to the actual number of teeth on the gear that's attached to the dies and printing cylinders. Each tooth count refers to a separate and actual repeat length.

Top Coat: A substance coated onto a label material that will enhance the printing or the appearance of the finished label.

Touch Tack: The property of a pressure sensitive label that causes it to adhere to a surface instantly with minimal presure and contact time (as measured by TLMI Tester or equivalent equipment).

TPI: Ties Per Inch. In perforations, this is the number of material ties that exist between each hole.

Tractor Feed: Round or rectangular holes punched into the edge of a liner to maintain the register of computer imprintable pressure sensitive labels during imprinting.

Transfer Type: A coating or pressure sensitive adhesive applied to a liner that is release coated on both sides. This allows the user to apply the tape to a surface and remove the liner, leaving only the adhesive on the surface.

Transparency: That property of a material that transmits light rays so that objects can be clearly seen through the material.

Transparent Label: A pressure sensitive label of which the face material, adhesive, and protective coatings transmit light so that objects can be seen through it.

Trapping: Overlapping colors to allow for slight misregistration on press without losing the colors' integrity.

Turning Bars: Stationary bars on a press that guide the web in a manner that is turned front to back, and will be printed on the reverse side by the printing units.

Varnish: A heat-cured coating of one or more materials applied to face material for protection and/or decoration.

Vinyl: Synthetic plastic products that can be made in film, sheet or other forms. They can be manufactured in rigid and flexible constructions, yet are generally more flexible and formable than polyester. Vinyl can be colored and has excellent resistance to oils, chemicals and abrasion.

Waste: The face material and adhesive layers of a pressure sensitive construction surrounding a -cut label which is typically removed after die-cutting.

Water Soluble Adhesive: A pressure sensitive adhesive in which all components are water-soluble.

Weatherability: The capability of a material to withstand the effects of weather.

Web: A continuous sheet of pliable manufactured material.

Web Direction: The direction of any material parallel to its forward movement on the press.

Web Tension: The amount of pull or tension applied in the direction of travel of a web of paper through a web press.

Wet Out: The condition of an impregnated reinforcement wherein substantially all voids between the sized strands and filaments are filled with resin.

Wrinkling: The puckering or creasing of a pliable material that can result from environmental conditions and/or manufacturing situations.

Yellowing: A defect characterized by a gradual color change in the original appearance of white paper; the development of yellowish or brownish hues.

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