LASER LABELS

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Laser printers use heat and pressure to fuse images onto the surface of a document. Labels used on laser printers require materials that are resistant to heat and the pressure applied by the fusing action of the printer. Laser printers come in a variety of models from low-speed desktop to high-speed floor models. These printers vary in the fusing temperature, dwell time (time exposed to heat), the pressure applied to fuse the toner to the document surface, the feed path into and through the printer, and the leading edge of the document being printed.

MATERIALS

Most laser printers have a maximum recommended stock thickness of .007 mils or 7pt stock. Most conventional label stock is .0065 or 6.5 pt stock. Any combination of heavier facestocks or liners may result in a feeding problem.

Not only are laser materials required, but also the moisture content of the liner and facestock must be balanced in order to minimize potential curl.

Laser printers are extremely sensitive to paper curl and static which can cause feeding problems in both sheet fed and continuous feed laser printers. Curl and static often result from the temperature and moisture content of the label.

Facestocks: Normally uncoated, moisture controlled facestocks within a basis weight range of 20#-28# will process satisfactorily within a laser printer. There are a select few coated stocks designated as laser compatible that will perform satisfactorily (make sure you test those you are considering).

Adhesives: Most adhesives will eventually ooze out the sides of a label and create adhesive build up on rollers and the photoreceptor drum. To prevent this there are three options:

- Use a non-ooze adhesive. These are patented adhesives and available from a limited number of suppliers. Non-ooze adhesives are more expensive. However, by using non-ooze adhesives, exact stock size can be utilized, offsetting their cost. These adhesives will work flawlessly in simplex applications but are not warranted for duplex applications, especially on high-speed floor model printers
- Strip out a 1/16" or 1/8" matrix around the outside of the label sheet. This will remove the adhesive from the edge of the document, preventing it from transferring to the printers advance rollers and photoreceptor drum.

- Use a special strip coated adhesive. This process provides a non-adhesive edge (in the web direction) on both sides of the document

Liners: There are a number of standard thickness liners now laser qualified. Both 40# and 50# liners are available. More recently, manufacturers are providing MF (machine finished) liners that provide a rougher surface on the back of the liner. This roughness improves feeding in some laser printers using plastic advance rollers. They are also less expensive to manufacture.

DIE CUTTING

Die Cutting, butt cutting, or die cutting with matrix removal is possible provided the tooling is matched to the liner. One-eighth (1/8") matrix removal around the entire sheet is recommended for material feeding through high-speed floor model sheet fed printers. One-sixteenth (1/16") matrix removal around entire sheet is recommended for material feeding through low-speed desktop printers.

Matrix removal offers the following advantages:

1. Prevents adhesive contamination of the photoreceptor and feeing devices in the printer.

2. Aids in label removal from the liner.

3. Aids in refolding of continuous web material.

For applications where matrix removal is not possible, make sure that the die cuts do not run off the edge of the sheets. Die cuts running off the sheet encourage adhesive flow and increase the probability of adhesive build-up in the printer.

Features such as perforations, slits, ink coverage, punching, and matrix stripping can also contribute to printer processing problems.

SHEETING

Grain direction must be considered to ensure proper feeding through high and low speed laser printers. While the thickness of label stock generally creates enough stiffness for feeding, curl memory issues can result in jamming. If the leading edge of the document is the 8.5" dimension, it is recommended that the document be sheeted at 11". If the leading edge of the document is the 11" dimension, it is recommended that the document be sheeted at 8.5."

PRINTING

Avoid flood coating the sheet as it could result in uncontrollable curl and poor toner anchorage. Consider using a screen to give the appearance of a solid.

Avoid flexographic printing areas that will subsequently be laser printed unless compatibility with the toner has been fully tested.

PACKAGING

Converted sheets can be packaged in a variety of ways as long as the material is protected from both moisture and physical damage. Materials should be packaged in quantities consistent with the usage at the end user. Recommended methods include shrink-wrapping 200-500 sheets between two heavy

chipboard or corrugated sheets for high volume applications and 100 sheets per package for low volume applications.

STORAGE
As with all pressure sensitive products, it is recommended that the labels be stored at 70 degrees and 50% relative humidity. Do not stock cartons more than four high to avoid excess pressure. Do not store cartons directly on concrete.

PREPARING FOR USE
Allow labels to adjust to the printer environment for a minimum of 72 hours before printing. Shrink-wrapped packages must be opened prior to use to allow the stock to acclimate to the user environment.

Fan stacks of labels prior to placing into the printer feed trays and always re-seal the package of labels to prevent moisture changes.

Label shelf life is up to one year when stored according to directions.

LASER TAGS
Most laser printers have a maximum recommended stock thickness of .007 mils or 7pt stock. Most tag grades are manufactured with moisture control characteristics, making them compatible for use in laser printers. Standard uncoated tag is 100# and .007 mils or 7pt thickness. There are additional tag grades including 125# tag (.009 mils), 150# tag (.011 mils), and 175# tag (.013 mils). Sometimes heavier stock can be used in some printers depending on their feed path. The more turns and curves in the feed path, the more difficult it is to feed through the printer.

C1S coated board is not qualified for use in laser printers. It has very poor moisture control and will curl significantly. The thinnest of the C1S coated board products exceeds the maximum thickness recommendations of most laser printer manufacturers. Additionally, most coated surfaces are too smooth for consistent, high quality toner coverage.

Vinyl and polyester are the two recommended synthetic stocks for use in laser printers. They are heat resistant and are available with top coating for toner imaging. Composite materials (paper/synthetic/paper) are available for economical, durable requirements.

Many times tag products are perfed into smaller segments for use after printing. It is recommended that perforations do not cut across the leading edge; the perfs should extend just short of the leading edge. Thick, rigid stocks have difficulty making the sharp turns in the feed path of many desktop laser printers. Tag sheets with many perfs in them tend to break across the leading edge when that leading edge has perfs extending off the edge. This will result in frequent jams from stock splitting apart in the feed path.

As is the standard with most documents, it is recommended that sheets be cut grain long.

As with other laser documents, heat resistant inks are recommended.