Wasp
BARCODE TECHNOLOGIES



# Printer Media Guide

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# Overview:

## Printing with barcodes

Barcode printing is fueling the evolution of printing in a digital era. Why? Barcodes transmit thousands of data in a single scan. If you print barcodes to track inventory, assets or other unique applications, it's important to understand what printer media choices affect the quality, utilization and life expectancy of your printed material. This step-by-step guide will help ensure you get the right print product by walking you through the choices involved in your printing needs assessment.



Visit Wasp's Barcode Education Library for more information about printing barcodes
http://www.waspbarcode.com/barcode_education/

# 1 Printer Types

Which printer is best suited for your needs - desktop or industrial?

Most barcode image files are vector artwork, which means that the image is resolution independent and can be scaled without affecting quality. This is especially important when producing barcode! Resolution errors when outputting barcodes can result in poor quality printed barcodes, which makes them more difficult to read.





# 2. Print Method

## Printing Barcodes – what print method is best?

**Lithographic** or **Flexographic** traditional printing is common for retail use. Barcode artwork is made into plates which are used to mass print copies of the image.

**Laser** or **Inkjet** printing is best for in-house label printing. Use caution when printing with Inkjet! Be sure to monitor ink spread on paper such that quantity applied does not make the barcode unreadable.

**Thermal transfer (TT)** or **Direct Thermal (DT)** printing. This utilizes a special kind of printer which uses heat to produce an image on the label. One method is likely better than the other for your printing needs.

### Thermal Transfer

In thermal transfer printing - a wax or resin ribbon is used to produce a permanent image on the label. Thermal transfer labels last much longer than direct thermal labels and offer higher levels of scratch, smudge, and heat resistance.

Thermal transfer printing is recommended for asset tagging, evidence tagging, outdoor barcoding, and certification labeling, as well as common labels that will be exposed to above normal temperatures.

### Direct Thermal

In direct thermal printing - special heat sensitive labels are used, making the image susceptible to elements over time. Direct sunlight and high temperature environments accelerate deterioration.

Direct thermal printing is recommended for general-purpose labeling, warehouse pick ticketing, distribution, shipping, address labeling, packaging, and shelf and retail product labeling.

# 3. Print Material

## Printing Barcodes – what print method is best?

Identify the size and type of label you need and select the material that best suits your application.

## Paper

**Direct Thermal (DT)** paper labels are an excellent choice for light duty applications like retail, shipping/receiving, inventory, document tracking, shelf labeling, and customer management records.

**Thermal Transfer (TT)** paper labels provide excellent resistance to contaminants like water, blood, fat, PVCs, and oils. When used in combination with ribbon, TT paper labels offer much higher resistance against environmental factors. TT paper labels well suited for near-permanent label making – like asset tags, property/evidence management, shipping/receiving and more.

## Polyester

Polyester labels provide much stronger resistance to temperature, tearing, abrasion, solvents and water. When combined with the appropriate ribbon, poly labels are best used for applications demanding an extremely durable label. These labels can also include a tamper-evident feature to protect against theft and asset loss.

## Kimdura (Polypropylene)

Kimdura is a synthetic material - very strong and much more resistant to temperature, chemicals, and tearing than paper labels. However, they are considered less durable than polyester.

## Wristbands

Wristbands are available in standard sizes for adults and infants. Wristbands are water-resistant with a durable top-coat water protection against soap and hand sanitizers, and fitted with a permanent adhesive closure and unique tamper cut design.

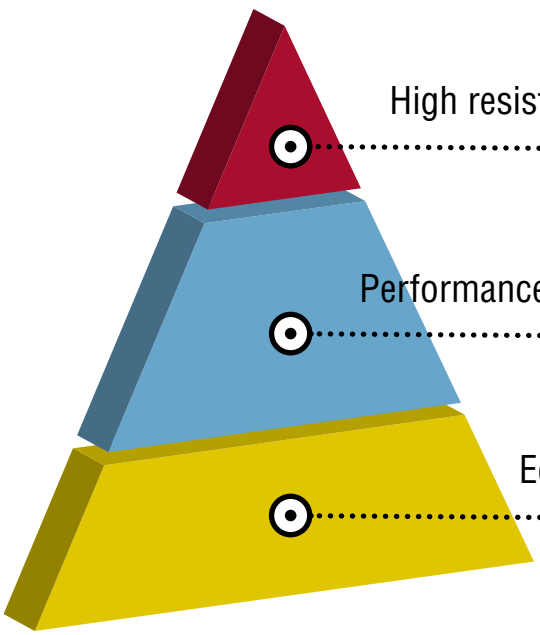
In a healthcare setting, hospital wristbands prevent data collection and entry errors by ensuring health services are delivered to the right patient, every time. Wristbands are magnetic resonance (MR) safe and latex free and meet patient ID guidelines for the Joint Commission, World Healthcare Organization (WHO), Health Insurance Portability and Accountability Act (HIPAA), and the American Hospital Association (AHA).

Event wristbands are optimal for tracking attendees at music festivals, sporting events and other restricted-access gatherings.

# 4. Ribbons

Ribbons are required for thermal transfer printers. Using thermal transfer labels with ribbons means a longer shelf space and will be resistant to damage from heat or friction compared to direct thermal printing.

Ribbons offer benefits like heat and smudge resistance, plus they provide a layer of print head protection. Ribbon material matters because certain ribbons have a stronger bond to certain label materials. Wax, Resin and Wax-Resin blend ribbons are available; prices become more expensive as the ribbon material becomes stronger.



**Wasp eXtra**
High resistance and durability

**Wasp Premium**
Performance and multi-purpose

**Wasp Wax**
Economy and quality

Resin (Wasp eXtra) is for perfect for labels in harsh conditions; best possible print quality on synthetic, matte, or high gloss coated label stock. Heat resistant up to 356° F (180° C).

Wax/Resin (Wasp Premium) ribbons are suitable for coated, uncoated, and most synthetic label materials. Heat resistance up to 212° F (100° C).

Wax (Wasp Wax) ribbons work well with paper labels & allow for printing on coated, uncoated, and some synthetic label surfaces. Heat resistance up to 149° F (65° C).

| LABEL MATERIAL | BEST | GOOD |
|---|---|---|
| Paper | Wasp Wax (Wax) | Wasp Premium (Wax-Resin) |
| Polyester | Wasp eXtra (Resin) | Wasp Premium (Wax-Resin) |
| Kimdura | Wasp eXtra (Resin) | Wasp Premium (Wax-Resin) |

# 4. Ribbons

| | |
|---|---|
| **Asset-tag** | An informational tag on inventoried items, used for ongoing asset management purposes |
| **Barcode** | An array of parallel bars and spaces encoding information |
| **Desktop barcode printer** | Easy-to-use, compact label printers that use thermal printing technology to produce barcodes quickly and efficiently |
| **Direct thermal (DT)** | A process in which a set of pins on a printhead are selectively heated onto heat-sensitive paper (or label stock). In turn, the paper turns dark and a bar code is formed. Direct thermal does not require a second consumable (ink or toner) to print, but a direct thermal image will fade over time. |
| **DPI** | Dots per inch |
| **Flexographic printing** | Printing process that utilizes a flexible relief plate for mass production of an item, printable on most any substrate and widely used in packaging and other large-scale operations |
| **Industrial barcode printer** | Industrial barcode printers are used in large warehouses and manufacturing facilities. They have large paper capacities, operate faster and have a longer service life |
| **Inkjet printer** | Print process that creates digital image by propelling ink droplets onto paper. Inkjet printers range from inexpensive consumer models to large, professional machines |
| **Kimdura labels** | Kimdura is a brand of polypropylene. Polypropylene labels are durable, waterproof and tearproof. Common applications include shelf and bin labels, as well as any other indoor application requiring durable or moisture-resistant labels |
| **Laser printer** | Electrostatic digital printing process that rapidly produces high quality text and graphics. |
| **Paper labels** | Versatile and for use in both TT and DT printers, paper labels come in many sizes and resistance factors, depending on print technology |
| **Polyester labels** | Durable labels for use in harsh temperatures, polyester labels may include a tamper-evident feature |
| **Print head** | The device on a direct thermal or thermal transfer printer containing the heating element that causes an image to be transferred to the facestock. |
| **Printer media** | Of or relating to printed matter |
| **Resin ribbon** | Resin ribbon produces the best possible print quality on synthetic, matte, or high gloss coated label stock. Heat resistant up to 356° F (180° C) |

| | |
|---|---|
| **Ribbon** | Material used with thermal transfer printers producing visible marks on a label (or substrate). A print head is heated and the ribbon is burned onto the label stock producing the barcode |
| **Thermal transfer (TT)** | Thermal transfer printing is a related method that uses a heat-sensitive ribbon instead of heat-sensitive paper to transfer printed image |
| **Thermal printing** | Thermal printing is a digital print process that uses heat to transfer images |
| **Vector Artwork** | Vector artwork means that the image to be printed is resolution independent and can be scaled up with no loss of quality. This is especially important when producing barcodes as resolution errors when outputting the barcodes can result in poor quality barcodes which in turn result in misreads if the codes |
| **Wax ribbon** | Wax ribbon works well with paper labels & allows for printing on coated, uncoated and some synthetic label surfaces. Heat resistance up to 149° F (65° C) |
| **Wax-Resin ribbon** | Wax/Resin ribbon is suitable for coated, uncoated and most synthetic label materials. Heat resistance up to 212° F (100° C) |



# Wasp Printer Media

To enhance your print applications, Wasp Barcode Technologies offers a broad selection of barcode printing supplies - labels, ribbons, asset tags, wristbands, replacement print heads and print head cleaning supplies. Wasp media is compatible with most printers on the market today. The information below will help you quickly select and order the best printer media and accessories for your business.

To place a media order visit **www.waspbarcode.com/barcode_labels_supplies** or call **866.547.WASP** (9277).

| **Wasp Wax Ribbon** | | | |
|---|---|---|---|
| **Description** | **W x L** | **Rolls/Box** | **Part Number** |
| Wax | 1.57” x 820’ | 1 | 633808431136 |
| Wax | 2.16” x 820’ | 1 | 633808431143 |
| Wax | 3.26” x 820’ | 1 | 633808431150 |
| Wax | 4.33” x 820’ | 1 | 633808431167 |
| | | | |
| **Wasp Premium Wax-Resin Ribbon** | | | |
| **Description** | **W x L** | **Rolls/Box** | **Part Number** |
| Wax/Resin | 1.57” x 820’ | 1 | 633808431174 |
| Wax/Resin | 2.16” x 820’ | 1 | 633808431181 |
| Wax/Resin | 3.26” x 820’ | 1 | 633808431198 |
| Wax/Resin | 4.33” x 820’ | 1 | 633808431204 |
| | | | |
| **Wasp eXtra Resin Ribbon** | | | |
| **Description** | **W x L** | **Rolls/Box** | **Part Number** |
| Resin | 1.57” x 820’ | 1 | 633808431211 |
| Resin | 2.16” x 820’ | 1 | 633808431228 |
| Resin | 3.26” x 820’ | 1 | 633808431235 |
| Resin | 4.33” x 820’ | 1 | 633808431242 |

| WPL205 Direct Thermal Labels | | | | | |
|---|---|---|---|---|---|
| **Description** | **W x L** | **OD** | **Labels/Roll** | **Rolls/box** | **Part Number** |
| Paper | 1.25” x 1.0” | 5” | 2300 | 4 | 633808402686 |
| Paper | 1.5” x 1.0” | 5” | 2300 | 4 | 633808402693 |
| Paper | 2.0” x 1.0” | 5” | 2300 | 4 | 633808402709 |
| Paper | 2.25” x 0.75” | 5” | 3000 | 4 | 633808402716 |
| Paper | 2.25” x 1.25” | 5” | 1900 | 4 | 633808402723 |
| Paper | 3.0” x 3.0” | 5” | 850 | 4 | 633808402730 |
| Paper | 3.5” x 1.0” | 5” | 2300 | 4 | 633808402747 |
| Paper | 4.0” x 1.0” | 5” | 2300 | 4 | 633808402754 |
| Paper | 4.0” x 2.0” | 5” | 1250 | 4 | 633808402761 |
| Paper | 4.0” x 3.0” | 5” | 850 | 4 | 633808402778 |
| Paper | 4.0” x 6.0” | 5” | 450 | 4 | 633808402785 |
| **WPL305 Direct Thermal Labels** | | | | | |
| **Description** | **W x L** | **OD** | **Labels/Roll** | **Rolls/box** | **Part Number** |
| Paper | 1.25” x 1.0” | 5” | 2300 | 4 | 633808402686 |
| Paper | 1.5” x 1.0” | 5” | 2300 | 4 | 633808402693 |
| Paper | 2.0” x 1.0” | 5” | 2300 | 4 | 633808402709 |
| Paper | 2.25” x 0.75” | 5” | 3000 | 4 | 633808402716 |
| Paper | 2.25” x 1.25” | 5” | 1900 | 4 | 633808402723 |
| Paper | 3.0” x 3.0” | 5” | 850 | 4 | 633808402730 |
| Paper | 3.5” x 1.0” | 5” | 2300 | 4 | 633808402747 |
| Paper | 4.0” x 1.0” | 5” | 2300 | 4 | 633808402754 |
| Paper | 4.0” x 2.0” | 5” | 1250 | 4 | 633808402761 |
| Paper | 4.0” x 3.0” | 5” | 850 | 4 | 633808402778 |
| Paper | 4.0” x 6.0” | 5” | 450 | 4 | 633808402785 |
| **WPL305 Thermal Transfer Labels** | | | | | |
| **Description** | **W x L** | **OD** | **Labels/Roll** | **Rolls/box** | **Part Number** |
| Paper | 1.25” x 1.0” | 5” | 2300 | 4 | 633808402488 |
| Paper | 1.5” x 1.0” | 5” | 2300 | 4 | 633808402495 |
| Paper | 2.0” x 1.0” | 5” | 2300 | 4 | 633808402501 |
| Paper | 2.25” x 0.75” | 5” | 3000 | 4 | 633808402518 |
| Paper | 2.25” x 1.25” | 5” | 1900 | 4 | 633808402525 |
| Paper | 3.0” x 1.0” | 5” | 1425 | 4 | 633808403713 |
| Paper | 3.0” x 3.0” | 5” | 850 | 4 | 633808402532 |
| Paper | 3.5” x 1.0” | 5” | 2300 | 4 | 633808402549 |
| Paper | 4.0” x 1.0” | 5” | 2300 | 4 | 633808402556 |
| Paper | 4.0” x 2.0” | 5” | 1250 | 4 | 633808402563 |
| Paper | 4.0” x 3.0” | 5” | 850 | 4 | 633808402570 |
| Paper | 4.0” x 6.0” | 5” | 450 | 4 | 633808402587 |

| WPL305 Blank Asset Tags | | | | | |
|---|---|---|---|---|---|
| **Description** | **W x L** | **OD** | **Labels/Roll** | **Rolls/Box** | **Part Number** |
| Polyester | 2.0” x 0.75” | 5” | 3000 | 1 | 633808403010 |
| Polyester void remove | 2.0” x 0.75” | 5” | 2500 | 1 | 633808403027 |
| Polyester | 2.0” x 1.0” | 4” | 1380 | 1 | 633808403256 |
| Kimdura | 2.0” x 1.0” | 4” | 1125 | 1 | 633808403706 |
| **WPL608/WPL610 Direct Thermal Labels** | | | | | |
| **Description** | **W x L** | **OD** | **Labels/Roll** | **Rolls/Box** | **Part Number** |
| Paper | 1.25” x 1.0” | 8” | 5560 | 4 | 633808402907 |
| Paper | 1.5” x 1.0” | 8” | 5560 | 4 | 633808402914 |
| Paper | 2.0” x 1.0” | 8” | 5560 | 4 | 633808402921 |
| Paper | 2.25” x 0.75” | 8” | 7000 | 4 | 633808402938 |
| Paper | 2.25” x 1.25” | 8” | 4500 | 4 | 633808402945 |
| Paper | 3.0” x 3.0” | 8” | 2000 | 4 | 633808402952 |
| Paper | 4.0” x 1.0” | 8” | 5600 | 4 | 633808402976 |
| Paper | 4.0” x 2.0” | 8” | 3000 | 4 | 633808402983 |
| Paper | 4.0” x 3.0” | 8” | 2000 | 4 | 633808402990 |
| Paper | 4.0” x 6.0” | 8” | 1000 | 4 | 633808403003 |
| **WPL608/WPL610 Thermal Transfer Labels** | | | | | |
| **Description** | **W x L** | **OD** | **Labels/Roll** | **Rolls/Box** | **Part Number** |
| Paper | 1.25” x 1.0” | 8” | 5560 | 4 | 633808402792 |
| Paper | 1.5” x 1.0” | 8” | 5560 | 4 | 633808402808 |
| Paper | 2.0” x 1.0” | 8” | 5560 | 4 | 633808402815 |
| Paper | 2.25” x 0.75” | 8” | 7000 | 4 | 633808402822 |
| Paper | 2.25” x 1.25” | 8” | 4500 | 4 | 633808402839 |
| Paper | 3.0” x 3.0” | 8” | 2000 | 4 | 633808402846 |
| Paper | 3.5” x 1.0” | 8” | 5600 | 4 | 633808402853 |
| Paper | 4.0” x 1.0” | 8” | 5600 | 4 | 633808402860 |
| Paper | 4.0” x 2.0” | 8” | 3000 | 4 | 633808402877 |
| Paper | 4.0” x 3.0” | 8” | 2000 | 4 | 633808402884 |
| Paper | 4.0” x 6.0” | 8” | 1000 | 4 | 633808402891 |
| **WPL608/WPL610 Blank Asset Tags** | | | | | |
| **Description** | **W x L** | **OD** | **Labels/Roll** | **Rolls/Box** | **Part Number** |
| Polyester | 2.0” x 0.75” | 8” | 6000 | 1 | 633808402389 |
| Polyester void remove | 2.0” x 0.75” | 8” | 6000 | 1 | 633808402396 |

| **WHC25 Adult Wristbands** | | | | | |
|---|---|---|---|---|---|
| **Description** | **W x L** | **Color** | **WB/Roll** | **Rolls/Box** | **Part Number** |
| Polypropylene | 11” x 1.125” | White | 250 | 2 | 633808403942 |
| Polypropylene | 11” x 1.125” | Pink | 250 | 2 | 633808403959 |
| Polypropylene | 11” x 1.125” | Blue | 250 | 2 | 633808403966 |
| Polypropylene | 11” x 1.125” | Yellow | 250 | 2 | 633808403973 |
| Polypropylene | 11” x 1.125” | Red | 250 | 2 | 633808403980 |
| Polypropylene | 11” x 1.125” | Green | 250 | 2 | 633808403997 |
| Polypropylene | 11” x 1.125” | Purple | 250 | 2 | 633808404000 |
| Polypropylene Front/ PE Back | 11.5” x 1.125” | White | 150 | 2 | 633808404017 |
| **WHC25 Infant Wristbands** | | | | | |
| **Description** | **W x L** | **Color** | **WB/Roll** | **Rolls/Box** | **Part Number** |
| Polypropylene | 8” x 0.75” | White | 200 | 2 | 633808403935 |
| **WHC25 Direct Thermal Labels** | | | | | |
| **Description** | **W x L** | **OD** | **Labels/Roll** | **Rolls/Box** | **Part Number** |
| Paper | 1.25” x 1.0” | 5” | 2300 | 4 | 633808402686 |
| Paper | 1.5” x 1.0” | 5” | 2300 | 4 | 633808402693 |
| Paper | 2.0” x 1.0” | 5” | 2300 | 4 | 633808402709 |
| **WPL25 Direct Thermal Labels** | | | | | |
| **Description** | **W x L** | **OD** | **Labels/Roll** | **Rolls/Box** | **Part Number** |
| Paper | 1.25” x 1.0” | 5” | 2300 | 4 | 633808402686 |
| Paper | 1.5” x 1.0” | 5” | 2300 | 4 | 633808402693 |
| Paper | 2.0” x 1.0” | 5” | 2300 | 4 | 633808402709 |
| **WPL25 Adult Wristbands** | | | | | |
| **Description** | **W x L** | **Color** | **WB/Roll** | **Rolls/Box** | **Part Number** |
| Polypropylene Top Side | 11.5” x 1.125” | White | 150 | 2 | 633808404017 |
| **WPL25 Infant Wristbands** | | | | | |
| **Description** | **W x L** | **Color** | **WB/Roll** | **Rolls/Box** | **Part Number** |
| Polypropylene | 8” x 0.75” | White | 200 | 2 | 633808403935 |

| **Pre-Printed Asset Tags** | | | | |
|---|---|---|---|---|
| **Description** | **W x L** | **Number Range** | **Rolls/Box** | **Part Numbers** |
| Paper | 2.0” x 1.0” | 1100-2100 | 1 | 633808403515 |
| Paper | 2.0” x 1.0” | 2101-3100 | 1 | 633808403522 |
| Polyester | 2.0” x 1.0” | 1100-2100 | 1 | 633808403539 |
| Polyester | 2.0” x 1.0” | 2101-3100 | 1 | 633808403546 |
| Kimdura | 2.0” x 1.0” | 1100-2100 | 1 | 633808403553 |
| Kimdura | 2.0” x 1.0” | 2101-3100 | 1 | 633808403560 |
| **WRP8055 Receipt Paper** | | | | |
| **Description** | | | **Rolls/Box** | **Part Number** |
| Paper | | | 1 | 633808491093 |
| Paper | | | 12 | 633808491116 |
| Paper | | | 50 | 633808471231 |

| **Wasp Print heads** | |
|---|---|
| **Description** | **Part Number** |
| WPL205 203 DPI Print Head | 633808402167 |
| WPL305 203 DPI Print Head | 633808402167 |
| WPL608 203 DPI Print Head | 633808403676 |
| WPL610 203 DPI Print Head | 633808403683 |
| WPL25/WHC25 203 DPIU Print Head | 633808403881 |
| Thermal Print Head Cleaning Pen | 633808441012 |