



# **WS Packaging Group, Inc.**<sup>®</sup>

Leaders in Printing and Packaging Worldwide

## **SUPPLYING DIGITAL FILES FOR FLEXOGRAPHIC PRINTING**

Click on a topic below for detailed information or **Quick Reference** for a summary of these specifications.

**Bleed**

**Minimum Type & Rule Sizes**

**Gradients & Screens**

**Press Movement**

**Reverse Text**

**Vectorized Art**

**Raster Images**

**Bar Codes**

**Food Labeling**

**Internet Uploads**

**Acceptable Software & Media**

**Glossary of Terms**

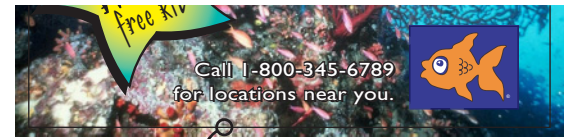
**Call: 800-340-3424 ext. 6231**

E-mail: [marketing@wspackaging.com](mailto:marketing@wspackaging.com)

Web site: [www.wspackaging.com](http://www.wspackaging.com)

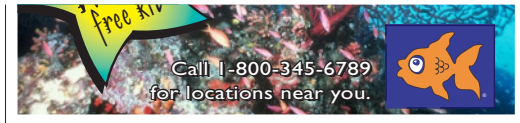
## BLEED

Build in 1/8" bleed for any copy that runs off the edge of the label. Bleed accounts for movement when the die cuts the stock. It prevents the appearance of a white gap on the edge of your label if the die does not line up perfectly. Additional art charges may be incurred if we need to add bleed to a raster image.

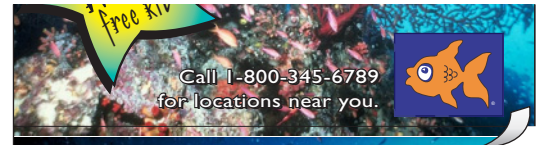


Fine black line represents where the die is intended to cut.

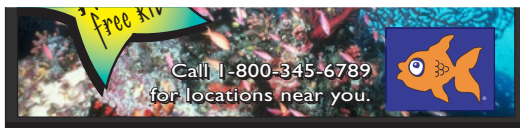
Sheeted or square corner labels may need special adjustments when art is to bleed off the edge. When a flexographic print plate wraps around its cylinder, the seam where the two ends meet or "butt" will always leave a slight gap. This gap results in a small unprinted area which will appear on the edge of the final printed label as a white line. The location of this butt line varies depending on the label unwind. There are several ways in which to minimize or eliminate this white line.



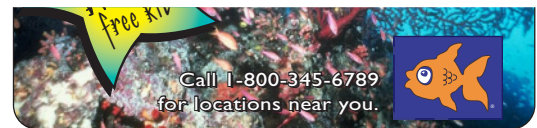
1. Leave a 1/16" or more white border around the label. (The plate seam will be hidden in the border.)




3. Add a tab area in which the butt line will land. (Size of tab area may vary. Tab area will be discarded.)



2. Print a separate spot of ink over the seam line. (This approach involves a separate plate and works only on certain colors. On most, it only accentuates the problem since most colors darken with a second coat of color. In the illustration above we added a black border to simulate this. This is only an option were a solid color is to bleed off. Results may vary.)



4. Print your design on round corner labels. (This will allow the seam to be hidden in the strip-out areas while still allowing your design to bleed off the edge of the label. The standard corner radius is 1/8" as shown above. Dies can be ordered with a radius as small as 1/64", like the radius used here: )

## MINIMUM SIZES

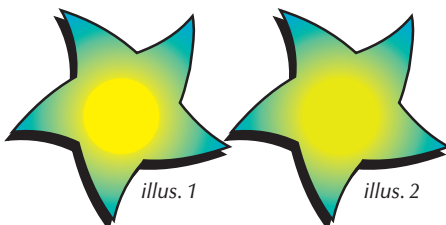
**TYPE:** We recommend using no less than 4 pt. text, especially when reversed out of a solid background. We also recommend using bold fonts for reverse text and avoiding fonts with serifs which may fill in. Where text overlaps more than one color, add a 0.5 pt. stroke to keep text legible.

**LINES:** Avoid using less than 0.5 pt. rules. A rule finer than 0.5 pt. that has no copy near it may print wavy due to lack of support on the printing plate. Reverse rules less than 0.5 pt. may fill-in especially if there are large solid areas in the same color on the label. Outlines around text or objects should be no less than 0.5 pt. thick.

**TOLERANCE TO DIE CUT:** For best results, make edge borders 1/16" wide and keep any artwork that does not bleed spaced 1/16" from the die. With any press movement, spacing and borders will still look consistent on all edges of the label.

## GRADIENTS & SCREENS

Gradients and screened colors should not use less than a 1% screen of a color. A smooth blend of color to no color at all cannot be achieved unless it is a gradient of a very light color, like yellow. Illustration 1 represents how a gradient abruptly stops where there are 1% screens (cyan in this case). The example shown in illus. 2 represents the same art carrying 1% cyan through the center.

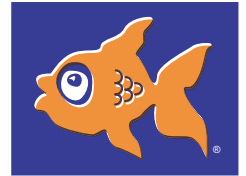


Avoid using a screen of a color in large background areas. Color inconsistencies can occur due to movement and vibration on press. Instead, use a lighter solid PMS color for large areas.

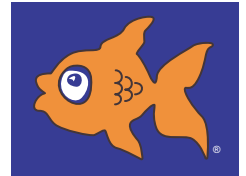
## PRESS MOVEMENT

Wherever two colors meet they must overlap slightly so that with any movement of the material on press, there is no white gap between the colors. We call this "trapping". In the bottom fish example, the orange color is trapped into the purple. Depending on the design and the colors involved, we may use more or less than .01". You do not need to supply files trapped; we will determine and apply the necessary trap to your files.

The fish here illustrates an issue that occurs as a result of trapping. The purple outline appears almost black since the orange is trapped into it. Art which is too small to trap, like the scales on the fish, will overprint as shown in the bottom example, resulting in a color change. When designing artwork, please be aware of color combinations which may give you similar results.



Artwork out of registration with no trap applied.



Artwork with trap applied.

## REVERSE TEXT



Reversed text over 2 PMS colors or 4-color process

Misregistration results

Outlines added for registration

If reverse text or other objects occur within process or run from one spot color into another, it should be outlined with black or some other color that exists in the layout. If these different colors move even slightly it will distort the text or the object. (If it occurs within process, it may appear blurry.) The outline allows the edges of those colors behind the text to hide behind the outline. Thus, movement will not distort the text or the object. We need at least a 0.5 pt outline to do this. It is also best if any reverse text is a BOLD font.

## VECTORIZED ART

When possible, copy should be supplied as vectorized art (curves) and/or editable text so that resolution is not an issue. Vectorized Line Art is art created in a drawing program such as Adobe Illustrator. Line art consists of shapes and lines that can easily be manipulated by grabbing points (nodes or anchor points) and adjusting them (see the selected star shape in illus. A & B). Colors can be applied or an outline can be added easily to vector art. Line thicknesses can be increased easily and the resolution is always good no matter what size the art prints at.

Trapping and text editing can also be done with ease. In the example below, the background image is the only item supplied as a raster image, the remaining copy is vectorized art or editable text.

Note the difference in the crispness of text and lines in the two examples shown below.



If text is part of a bitmap image, the pixels determine smoothness.



For better results, use editable text or curves with outlines added for registration.



illus. A

Text in curves (not editable- this is vectorized line art)

CMYK bitmap image

Editable text uses font named "Little Mischief"

Star shapes are vectorized lines (note anchor points shown in blue)



illus. B

(a view of same artwork in wire frame view)

## RASTER IMAGES

A raster based application is one in which the art is composed of a "mesh" of squares called pixels. Each pixel is made up of a certain number of colors. These are referred to as channels. The resolution of a raster image is determined by the number of pixels within one inch (communicated as "pixels per inch" - ppi).

There are several ways to describe files that are set up with a certain number of channels or resolutions, and this is what makes communication of digital artwork very confusing. Following is an outline of the different types of raster files that we use.

### *Bitmapped*

**Description:** 1-bit files are composed of pixels that are either solid black or solid white. These pixels have only one channel - black.

**Other names for this type of file are:** 1-bit graphic, line art, bitmap

**Resolution requirements:** 1-bit graphics have to be at a very high resolution in order to appear crisp when output to film. 600 - 1200ppi - more is better, however, over 1200ppi is overkill.

**Common use:** 1-bit graphics are commonly used for logos or small, simple graphics.

### *Grayscale*

**Description:** Grayscale files are composed of pixels that are 1 of 256 shades of gray. This is like a 1-bit graphic because the pixels have only one channel - black (256 shades). This is how you see a black and white photographic image.

**Other names for this type of file are:** Black and White, Monotone, Halftone (not accurate unless it is screened)

**Resolution requirements:** In our work flow, grayscale images should have 300ppi minimum if the image is used at 100% and output to film at a 150 line screen. We choose a resolution of 2 x line screen as the formula for a minimum setting. For an optimal setting, we set our files to 300ppi even if the line screen will be lower. This is an 8-bit graphic.

**Common use:** Grayscale images are commonly used for black and white images with shades of gray.

### *Monotone*

**Description:** A Monotone is a Grayscale file; however, instead of black, another color is used. This can be seen on screen as well as output to a digital proofer.

**Other names for this type of file are:** Should not be called by other names

**Resolution requirements:** Same as Grayscale

**Common use:** Same as Grayscale; however, a color other than black is desired.

### *Duo-, Tri- and Quadtones*

**Description:** These files are just like Monotones; however, there are additional colors added in order to expand the color range of an image. *Important: These are not Multichannel files, the extra colors are added to enhance the look of a grayscale or monotone image.*

**Other names for this type of file are:** Should not be called by other names

**Resolution requirements:** Same as Grayscale

**Common use:** Same as Grayscale; however, other colors are used to enhance the image.

### *4 Color Process*

**Description:** Process files are composed of pixels that are a mix of colors. These pixels have four channels - cyan, magenta, yellow and black. Each channel works like a monotone of these colors. This 32-bit graphic is considered a full-color image.

**Other names for this type of file are:** Color, CMYK, full color

**Resolution requirements:** In our work flow, CMYK images should have 300ppi minimum if the image is used at 100% and output to film at a 150 line screen. We choose a resolution of 2 x line screen as the formula for a minimum setting. For an optimal setting, we set our files to 300ppi even if the line screen will be lower. However, a 32-bit graphic at 300ppi is much larger than an 8-bit graphic at 300ppi (more bits per pixel).

**Common use:** Photographic images, full-color illustrations.

## Multichannel files

**Description:** Multichannel files are a new feature in Photoshop that allows us to either add additional channels to a process image or reduce a file to only the channels that are used. We would add a channel to a process image in order to add more color to a file. 4 color process is limited in its ability to reproduce all colors. Therefore, we can add a channel of 485 Red, for example, to make a more vivid looking sunset. Some files can be reduced to a channel or two when using specific colors. This can make a process job easier and more accurate to run on press. *(Don't confuse Multichannel files with Duo-, Tri or Quadtones. Remember, their purpose is to enhance a Grayscale or monotone image. They don't divide into separate channels.)*

**Other names for this type of file are:** DCS file

**Resolution requirements:** In our work flow, Multichannel files should have 300ppi minimum if the image is used at 100% and output to film at a 150 line screen. We choose a resolution of 2 x line screen as the formula for a minimum setting. For an optimal setting, we set our files to 300ppi even if the line screen will be lower. However, there are 8 bits per channel. Therefore, the more channels, the bigger the file.

**Common use:** Photographic images, full-color illustrations.

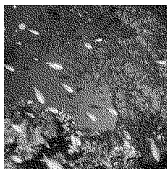
## RGB

**Description:** RGB (red, green, blue) files are the natural color files for color measured from light. There are three 8-bit channels of red, green and blue (RGB). Scanners scan in RGB and monitors display in RGB. Images in RGB are vibrant and more accurate in color. However, presses can't print RGB. RGB is an "additive" color space. Presses use ink which works in a subtractive color space (CMYK and all spot colors). RGB files must be converted to CMYK and/or spot colors to print. A change/loss of color may (and probably will) occur due to the different gamut ranges. This allows greater and more optimal control over the separation.

**Other names for this type of file are:** Best not to use other names

**Resolution requirements:** In our work flow, RGB images should have 300ppi if the image is used at 100% and output to film at a 150 line screen. We choose a resolution of 2 x line screen as the formula for a minimum setting. For an optimal setting, we set our files to 300ppi even if the line screen will be lower. These are 24-bit files (8 bits per channel).

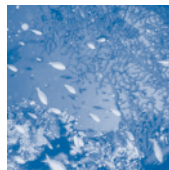
**Common use:** Photographic images, full-color illustrations viewed on a monitor (and internet).



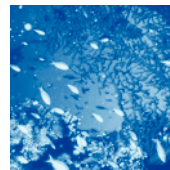
Bitmap file



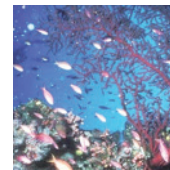
Grayscale file



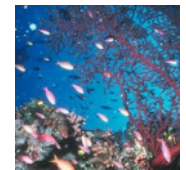
Monotone file



Duotone file



4 Color Process file

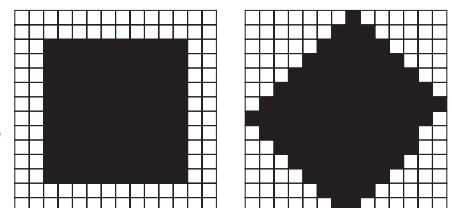


RGB file

## Quality Factors

**Resolution:** Resolution is a very general term that is often confused with other settings. Resolution, in scanning terms, means how many samples per inch the scanner will read off the original piece. Even though a higher resolution setting will produce more detail, there is a greater price to pay in terms of file size for all that detail. When a Digital file is output to film, printer or monitor, there is a set amount of resolution that those output devices can use. They throw away all of that extra information. Therefore, not understanding or using resolution improperly can result in wasted time, wasted file space and reduction in quality. We would prefer our images at 2 times the line screen that we will use. Therefore, an image at 100% will have a resolution of 300 pixels per inch ( $2 \times 150 \text{ lpi} = 300$ ) MINIMUM. This amount of resolution supplies enough information to the image setter to output a film at 150 lpi and an output resolution of 2400 dpi. For an optimal setting, we set our files to 300ppi, even if the line screen will be lower.

**Rotation:** Although it is hard to get an exact angle of rotation when deciding how to place an image into a layout, it is best to know what the angle will be before an original is scanned. Rotating a raster image somewhat degrades the quality of that image. This is because the pixel "grid" cannot rotate along with the image. Edges will become less sharp after rotation. However, it is important to know that this usually occurs in the design stage before it ever gets to us; therefore, the damage is done and we deal with it anyway. If we can find out the angle before we scan an image, we will scan it in at an appropriate angle.



## BAR CODES

### *LOOKING FOR INFORMATION ABOUT BAR CODES?*

If you are searching to get a new manufacturer's number assigned for your product, visit the Uniform Code Council's web site at [www.uc-council.org](http://www.uc-council.org) or call 937-435-3870. Once you have a UPC code assigned to your product(s), we can create the actual bar code(s) to be printed using the numbers you supply.

### *DESIGNING WITH UPC CODES:*

For bar codes which are required to be consistently scannable, the size of your UPC and the space around it is critical. Whenever possible, UPC's should be created at 100% magnification. The **quiet zone** should be a minimum of 1/8 inch wide.

## FOOD LABELING

### *FOR UP-TO-DATE INFORMATION ABOUT NET WT., NUTRITION FACTS AND MORE:*

Visit [www.cfsan.fda.gov/~dms/2lg-toc.html](http://www.cfsan.fda.gov/~dms/2lg-toc.html) for clearly outlined and illustrated FDA standards in "A Food Labeling Guide"

## INTERNET UPLOADS

### *INTERNET:*

To upload files utilizing the "Online Services" feature of our web site you will need a user name and password. If you do not have these, contact your sales representative or customer service representative.

- 1) Go to "[www.wspackaging.com](http://www.wspackaging.com)" and select the red "**WebFlex Online Services**" button. You will be required to enter your user name and password.
- 2) Please follow the instructions very carefully: select a file for upload using the "Browse" button, enter the name of the file or rename it.
- 3) Complete the lower area with your company name, your name, phone number and e-mail address. If there are any instructions or comments regarding the files, enter this information in the "Special Instructions" area.
- 4) Once the accurate information has been entered, click "Upload File". You then will be given the option to upload additional files or go back to the main page. If you have any questions or comments, please call your customer service representative.

To use additional "Online Services" features of our web site, contact your sales representative or customer service representative to learn how to register for your own account name and password.

## ACCEPTABLE SOFTWARE & MEDIA

### *SOFTWARE:*

WS Packaging prefers to have all layout art supplied in Adobe Illustrator and raster images done in Adobe Photoshop. The preferred page layout program is InDesign or Quark XPress. Mac platform is preferred. Freehand MX is acceptable software. Artwork supplied in programs other than the preferred programs may require additional set up time and/or additional costs.

### *ACCEPTABLE MEDIA:*

WS Packaging accepts artwork on CD, DVD or by art upload (see above).

If you have any questions or comments, please call your customer service representative.

### *GUIDELINES FOR SENDING MEDIA:*

- A current color hard copy and/or samples to be color matched **must** be sent via mail prior to production. If timing is critical, a PDF file can be supplied for reference only; art to be supplied in original program(s).
- The Adobe Type Library will be used unless Type 1 fonts are supplied.
- Use only the colors you want your label to print or specify colors to be used; delete all unused colors.
- Specify the size (i.e. die line, crop marks, document setup...).
- When naming files, it is helpful to add a two or three character extension such as qxd for Quark, ai for Illustrator, eps for encapsulated PostScript, etc.). Use only **\_**, **-**, or **.** as special characters in file names.

# Glossary Of Terms

**Banding** - Sharp steps seen within a vignette as one color transitions to another color.

**Black and White** - Original art or proof in single color (black image on a white background), as distinguished from multicolor.

**Bleed** - Image or color that extends beyond the trim edge of the finished printed piece. The 1/8" extension beyond the actual trim dimensions of any graphics or type which run to the edge of a page. Bleed is created as a safety net to ensure that none of the paper is seen at the edge of the page after trimming down the printed sheet.

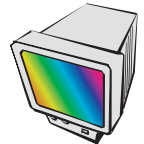
**CMYK** - Cyan, magenta, yellow, black; the four process color printing inks.



**Color** - A visual sensation produced in the brain when the eye views various wavelengths of light. Light is transmitted, reflected and/or absorbed.

**Color Correction** - To adjust a file to compensate for the characteristics of a printing process. Any method used to improve reproduction of the color original (photograph, transparency, chrome, 35mm slide, digital photo, painting, etc.).

**Color Key** - An overlay proof made up of layers of acetate or polyester attached in register to a backing substrate. Each overlay film carries the colored image from a film negative. Color breaks and traps can be judged, but exact color match to the final printed product cannot be made. (NOTE: We do not do these, but it may be requested by customers.)



**Color Monitor** - An RGB or composite monitor which uses separate video signals of red, green, and blue; the three primary additive colors.

**Color Separation** - The process of exposing an original color image through RGB filters to produce complementary images which will be printed with CMYK inks. The final plate making film negatives include masking (color modification) for specific inks and substrates, as well as halftone screening to enable printing a uniform tone scale with proper gray balance from extreme highlights through mid tones and shadows to maximum solid color. This can be done with a graphic arts camera, but today is accomplished almost exclusively and more effectively on scanners and image setters as one of the final prepress production operations.

**Comprehensive Layout/Comp** - A mock-up of a printed piece showing all type and pictures in rough form but in the right size and in the correct position; used for evaluating a design before final type and artwork are produced.

**Continuous Tone** - An image containing a range of color tones from light to dark. Appear as pixels on a color monitor or silver/pigment particles on a photograph. Must be converted to halftone dots in order to be printed.

**Copy** - To a writer it means headlines and text. To a printer it means anything that is to be photographed for a printing plate.

**CT** - An abbreviation for continuous tone. A picture file; conveying the concept that halftone screening can be performed on this file upon output, as when screening CTs at a specific size and screen ruling on an image setter. CT files are created by either scanning a picture into the system or by generating a CT image internally.

**Cut-back Curves** - Data which indicates the film negative halftone dot areas needed to compensate for normal dot gain throughout the entire tone scale during the printing process. This data is specific to particular printing materials and process conditions.



**Cyan** - One of the four ink colors used in four-color process printing. A blue-green color which primarily absorbs red light. Also commonly called process blue.

**Direct Digital Color Proofs (DDCP)** - Our DuPont Waterproof - Prepress color proofs that are imaged directly from digital data without the intermediate steps of film and contact exposure.

**Distortion** - Changing the size of a file in a non-proportional manner (anamorphic scaling).

**Distortion Factor** - A multiplier which compensates for normal flexo image shrinkage with rubber plates and image stretch when flexo plates are made flat and mounted around a cylinder for printing.

**Dot Gain** - The dot size growth from the film to a printed dot. This causes darker tones or unwanted colors. It generally is more pronounced in the mid-tones and shadow areas. It is a physical and/or optical measurement and theoretical calculation of the apparent increase in dot area from one medium to another. Normally expressed as the difference between a mid-tone (nominal 50%) dot area on a film negative and the printed dot area; for example, a 50% film dot area which prints as a 78% dot has a 28% dot gain. Dot gain (and loss) are normal and must be controlled throughout the prepress and printing process.

**Dot Gain Curve** - Graphic illustration of dot gain data throughout the entire highlight (non image) to extreme shadow (solid image) tone scale.

**Double Bump** - Application of two layers of ink to achieve greater opacity or more intense color.

**DPI** - Dots per inch.

**Drop Shadow** - Digitally generated shadow used in cases where shadow from photograph is inadequate or nonexistent. Generally created using only the black channel but can be created in 4-color as well.



**Duotone** - A special effect created by printing a black & white photograph with black and a PMS color ink. This effect can also be accomplished using black and multiple PMS colors.

**Dylux/Blue Line** - A blue image photo print made from stripped up film negatives. Blue line proofs can be used to check position of image elements and to show color breaks by varying exposure time to produce light and dark blue images but cannot show process color.

**EPS (Encapsulated PostScript)** - A file format that carries both a description of an image in the PostScript page-description language and an optional bitmap equivalent for screen display. Commonly used for image interchange on the MacIntosh.

**Font** - A complete set of characters in one design, size, and style. In traditional typography usage, font may be restricted to a particular size and style or may comprise multiple sizes, or multiple sizes and styles, of a typeface design.

**FPO** - Indicates "For Position Only". This image will be replaced in production (usually on the film image setter) with a high-resolution image.



**Gamut** - The total range of colors that can be displayed.

**GCR (Gray Component Replacement)** - System to reduce overprinted halftone dot sizes of CMY overprint areas and increase the appropriate black halftone dot sizes to achieve a neutral gray with less ink and improved printing conditions.

**Gray Balance** - The proper combination of cyan, magenta, and yellow ink dot area, hue/density, trap, transparency, and register on a specific substrate under normal printing conditions which reproduce as a neutral gray throughout the entire tone scale.

**Halftone** - A pictorial which has been converted from a continuous tone original image, such as a photograph, into dots of appropriate size which, when printed, give the visual illusion closely resembling the original over a gradation range from highlight to shadow.

**Halftone Tint** - An area of approximately equal sized halftone dots producing a uniform optical density.

**Highlight** - The lightest or whitest parts in a photograph represented in a halftone reproduction by the smallest dots or no dots.

**Imaging** - Taking a digital scan and composing, outlining, retouching or ghosting it. Drop shadows may be added to outlined elements. Vignettes may be generated to reduce the possibility of banding.

**Kerning** - Modifying the normal space between letters during typesetting; can be plus or minus letter spacing in computerized typesetting. Traditionally this involved reducing space between only selected characters, such as the L and Y in ONLY, to be more readable or pleasing to the eye; see letter spacing.



**Keyline** - An outline on finished art indicating the exact shape, position, and size for elements such as halftones, line art, UPC symbols, etc.

**Laser Scanner** - The latest equipment developed to create separations. A laser beam is used to generate a digital image which can be output to film.

**Letter Spacing** - Adding space between characters and spaces during typesetting; also known as "tracking" in some typesetting software; see kerning.

**Line Copy** - Any image suitable for reproduction without using a halftone screen.

**Lines Per Inch (lpi)** - The number of dots per linear inch in a halftone. Dot size varies from very small highlight dots to large shadow dots. More lines per inch increases resolution detail and dot gain. Lines per centimeter are specified outside the USA.



**Magenta** - One of the four ink colors used in four-color process printing. A bluish-red color which primarily absorbs green light but also absorbs an excessive amount of blue. Also commonly called process red.

**Mask** - 1.) Outline of an image on original art. 2.) Opaque material used to protect open or selected areas of a printing plate during exposure.

**Mechanical** - Camera-ready pasteup of artwork including type, photos, line art, etc., on a piece of art board.

**Moire** - An optical interference pattern caused when two screened images are superimposed at inappropriate angles. A flexo anilox roll also can cause moire.

**Outlining** - Digitally taking an object and removing it from its background. Often times drop shadows are added after this procedure to "ground" the object and reduce the illusion of floating in space.

**Output** - Information that comes from a computer as a result of its processing.

**Pixel** - Picture element, or the smallest unit (cell, dot, square) on a color monitor display screen grid that can be displayed, stored, or addressed. A picture is typically composed of a rectangular array of pixels.

**Print Contrast** - A ratio of the difference between the printed solid area density and a printed shadow tint area (normally 75% as measured on the plate making film negative) to the density of the solid, expressed as a percentage. This indicates the printing system's capability to hold image detail in the upper tone region. Most desirable (highest) print contrast occurs with the simultaneous highest solid print density and the lowest dot gain.

**Process Colors** - Color reproduction made by overprinting halftone separations using the four process colors; process yellow, magenta, cyan, and black. Hue may be modified to meet specific needs. SWOP (Specifications Web Offset Publications) is becoming the quasi printing industry standard.



**Quiet Zones** - Areas free of printing that precede the leftmost bar and follow the rightmost bar in a bar code symbol. Copy inside this area (shown in pink here) will cause scanning problems. This area should be AT LEAST 9 times the narrow bar size, or 1/8 of an inch, whichever is LARGER. A 100% size UPC-A has a narrow bar size of .013". Nine times this is .117". Since .117" is less than 1/8" of an inch, the 1/8" minimum standard applies.

**Raster Image Processing (RIP)** - A device or program that translates information in page description language to the pattern of dots to be delivered by the output unit of the system.

**Resolution** - A measure of the number of pixels per unit of linear measure, eg., 12 pixels per millimeter is a RES 12. Normally, the resolution of a file is the same vertically and horizontally; thus a square millimeter contains 12x12=144 pixels for a RES 12 file. The higher the RES, the better the image detail; but the file will be larger and will require longer processing time.

**Retouching** - Digitally adding, removing or recreating any element in a photograph.

**Reverse** - To change the tonal orientation of an image, making the darker elements lighter and the lighter darker. Note that to physically reverse the spatial orientation of an image is known as "flopping" the image.

**Reverse (knock-out)** - The process of dropping an image out of the background color so type, for example, will appear white with a color surround.

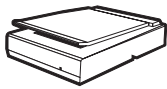
**REVERSE**

**Reverse Print** - 1.) Printing wrong reading on the underside of transparent film which, when laminated to another substrate with the ink in the middle of the "sandwich" causes the image to become right-reading when viewed through the sheet it was printed upon. 2.) Design in which the "copy" is "dropped out" and the background is printed.

**RGB** - Red, green, and blue primary additive colors which are the backbone of computer color visual display monitors and prepress color separation. They also are the complementary or secondary subtractive ink colors which produce red by overprinting magenta and yellow, green by trapping cyan and yellow, and blue by combining cyan and magenta.

**Rosette** - The desirable circular patterns created when four-color process colors are printed in register.

**Sans Serif** - Without serifs, which are the fine lines that finish off the main strokes of a letter. (Example: Sans Serif - H / Serif - H).



**Scanning** - Converting camera-ready artwork, reflective prints and transparencies into digital files. For critical color jobs, color corrections are executed during and/or after scanning. Custom setups are used for creating special effects such as duotones and touch plates.

**Screen Ruling (lpi)** - The number of lines to the inch in the screen ruling. They range from a COARSE ruling of 65 to FINE at 300 lines. The finer the screen, the sharper the detail in reproduction. Newspapers produce halftones in 55 to 85 line screen. Quality magazines may have up to 300 line screen. There are 90,000 dots/square inch in a four-color printed area using a 150 line screen.

**TIFF (Tag Image File Format)** - A file format for graphics developed by Aldus, Adobe, and Apple that is particularly suited for representing scanned images and other large bitmaps.

**Touch Plate** - A PMS plate which is used as a color bump on top of a 4-color or halftone image.

**Transparency** - A positive color image of an original, such as a 35mm slide. They come in standard photographic sizes, 2 1/4" x 2 1/4", 4" x 5", or larger.

**Trapping (Image)** - The practice of spreading the adjacent (butted) images printing in subordinate colors around white type or along a white line, permitting the dominant (usually darker) color image to define the edge. This allows normal register tolerances to exist without degrading the design. It is the .003" overlap of adjacent color objects to compensate for misregistration and paper stretch during the printing process. As a general rule, the lighter object is spread into the darker.

**Truncated** - Shortened. Decreasing the height of the bars in a UPC bar code symbol below the normal specification which decreases the symbol's ability to read omnidirectionally and should be avoided.

**Vector** - A line between two points. Vectors are created and displayed on the screen with drawing software. Vector drawings can be processed as a series of points and connections which are compact for a computer to store and manipulate.

**Vignette** - An illustration in which the background gradually fades away until it blends into the unprinted substrate or a solid print. Also called "fade." The term is occasionally used to indicate a conventional halftone.



# Quick Reference Chart

## Minimum Sizes:

Bar Code Quiet Zone .....	1/8"
Bleed .....	1/8"
Border width (outside edge) .....	1/16"
Rule Width Minimum .....	0.5 pt.
Screen % Minimum .....	1%
Spacing from Art to Die Cut.....	1/16"
Text Minimum Size .....	4 pt.
UPC Minimum Size .....	80%

## Resolution Requirements:

Bitmap Images .....	1200ppi
All Other Raster Images .....	300ppi

## Program Preferences:

Design Program .....	Adobe Illustrator
Raster Image Program .....	Adobe Photoshop
Page Layout Program .....	Adobe InDesign or Quark XPress

## Requirements for Supplying Artwork:

Media..... **CD, DVD or Art Upload** (see below)

Internet .....

**www.wspackaging.com**

*To upload art to our website, visit the above address. In the upper left corner of the site select the red button for **WebFlex Online Services**. Enter your user name and password and proceed to the Art Upload link in the left column. 1) Fill in the required fields, 2) Accept upload software, 3) Browse to select all associated files for your project, and 4) Upload. An upload summary page will list the files uploaded.*

*If you do not have a user name and password please contact your WSPackaging Group Customer Service Representative.*

Digital Files Must Include .....

... **hard copy (or PDF), fonts, and high resolution images**

Specify Colors .....

**delete unused colors**

Specify Size .....

**use die shape, crop marks or page size**

If you have any questions about sending files,  
please contact your customer service representative.