



CD / DVD & BD Label Art Specifications

Electronic File Submission Specifications

Technicolor prefers all labelart to be submitted electronically. Templates for the completion of the labelart preparation process can be obtained at <http://www.technicolor.com>. Review Technicolor Labelart: Screen Printing and Offset Printing Requirements for specific file preparation instructions.

Contact Requirements

- Provide your Customer Service Representative with the following information:
 - Company Name
 - Contact Name
 - Contact Number
 - Email Address
 - Labelart Title
 - Labelart Selection Numeric
 - FTP location of electronic files (including address, username, password, and posted filename)
 - Direct access to Technicolor's FTP site is available upon request
 - Listing of electronic files including graphic application type and version
 - Design studio contact name and number

Supported Applications (Apple Macintosh)

- Adobe Photoshop CS4
- Adobe Illustrator CS4 (Preferred format)
- Adobe InDesign
- Acrobat PDF (Hi-resolution only)

Acceptable Media Submissions

- FTP Retrieval
- DVD-R
- CD-R



CD / DVD & BD Label Art Specifications

Technicolor Labelart: Silkscreen Printing Requirements

Silkscreen Printing - A direct printing process by which ink is transferred through a porous screen onto the disc. Silkscreen printing requires the use of film positives. Film positives can be either provided by the customer or produced at Technicolor using the electronic files submitted by the customer. Consult your Customer Service Representative for film positive production pricing and arrangements.

For All Labelart

- Electronic templates are available from the Technicolor website at <http://www.technicolor.com>.
- A color-accurate proof is to accompany the labelart submission.
 - The supplied proof must be produced from the electronic file or film supplied to Technicolor.
 - Recommended proof output:
 - Foil stock.
 - If white stock is utilized the recommended brightness is 76% to 82% leaning cyan toward magenta.
 - 133 Lines Per Inch (LPI).
 - 5-color with white flood.
- Technicolor utilizes Sericol DVD Silkscreen Inks in the silkscreen printing process.
 - This ink is semi-gloss.
- Specify the PMS (Pantone Matching System) ink desired on each film positive.
 - Technicolor offers PMS Coated Series Inks (Pantone Solid Coated).
 - Previous analysis and approval IS REQUIRED for special inks, clear coating or varnish.
- Choke/Spread trapping of 0.35 pt is to be applied whenever registration is critical.
- A solid white base (flood) is recommended for all 4-color process labelart.
- Line screen minimum is 85 to 133 LPI. Technicolor output is 133 LPI unless requested otherwise.

For All Film Positive Submissions

- Film positive, right reading, emulsion side up (RREU).
- Film must be separated with the specific ink color clearly identified on each film positive.
- Registration marks are required at the top and center of each film positive.
- Adhere to the following film angles specifications. Forward this information to your film provider for 4-color process printing. For additional information regarding film output angle, consult your Technicolor Customer Service Representative.
 - Cyan = 172.5°
 - Magenta = 52.5°
 - Yellow = 7.5°
 - Black = 112.5°
 - Additional colors = 172.5°
- Outside film positives may incur up to a 20% dot loss.
 - Technicolor recommends all customers supply the electronic files rather than film to minimize this potential loss.
- Separations for silkscreen printing only using Elliptical dot shape.
- Camera-ready artwork is NOT accepted.



CD / DVD & BD Label Art Specifications

Technicolor Labelart: Silkscreen Printing Requirements - Continued

For Electronic File Submissions

- Media accepted: FTP, DVD-R, and CD-R.
- Submitting files via FTP:
 - Compress each labelart individually with ALL components. Include the Graphic elements (links), fonts (screen and printer fonts).
 - Provide FTP address, user name, password and the EXACT name of compressed file
- Supported Operating System: Apple Macintosh
- Supported Applications: Adobe PhotoShop CS4, Adobe Illustrator CS4, Adobe InDesign CS4, and Acrobat PDF (Hi-resolution only)
- In addition to the labelart files, provide a low-resolution PDF for color information and content reference.

For DVD-5 / DVD-9 (Single-sided DVDs) and BD

- Allowed printable area is from 20mm to 116mm. (This is to avoid the cosmetics due to printing over the mold IFPI code).
 - If single color artwork is utilized on DVD-5, the printable area is from 46mm to 116mm due to the inner-mirror band of the disc.
- Sans Serif typeface (Helvetica, Arial, Futura) is recommended for all minimum font sizes.
- Minimum font size is 6 pt. (Sans Serif)
- Minimum font size in knockout or reversed form is 6 pt. (Sans Serif)
- Minimum font size reversed out of halftone print with a flood is 7 pt. (Sans Serif)
- Minimum line width is 0.5 pt.
- Minimum line width in knockout or reversed form is 1 pt.
- Printing a halftone image with a solid flood will alter the ink color.
- Separation tonal ranges should be no less than 15% and no greater than 85%.
 - Below 15% may not transfer during printing and above 85% may appear solid.

For DVD-10, DVD-14, and DVD-18 (Double-sided DVDs)

- Allowed printable area:
 - Outer-ring from 39mm to 43.8mm
 - Inner-ring from 20mm to 25mm
- No halftone or 4-color process printing.
- Minimum font size is 5.5 pt medium or bold.
 - Preferred fonts: Futura Medium Condensed and Futura Bold Condensed
- Minimum line width is 0.5 pt.
- Minimum line width in knockout or reversed form is 1 pt.



CD / DVD & BD Label Art Specifications

Technicolor Labelart: Silkscreen Printing Requirements - Continued

For CD (Singled-sided CDs)

- For non-mold groove the allowed printable area is from 22mm to 116mm.
- For mold groove the allowed printable area is from 40mm to 116mm to avoid defective print due to the groove.
 - If CD with mold groove is require, then when designing your labelart, avoid placing critical data and images within the stacking ring area.
 - Mold groove dimension: 32 mm ID to 35 mm OD.
- Sans Serif typeface (Helvetica, Arial, Futura) is recommended for all minimum font sizes.
- Minimum font size is 6 pt. (Sans Serif)
- Minimum font size in knockout or reversed form is 6 pt. (Sans Serif)
- Minimum font size reversed out of halftone print with a flood is 7 pt. (Sans Serif)
- Minimum line width is 0.5 pt.
- Minimum line width in knockout or reversed form is 1 pt.
- Printing a halftone image with a solid flood will alter the ink color.
- Separation tonal ranges should be no less than 15% and no greater than 85%.
 - Below 15% may not transfer during printing and above 85% may appear solid.



CD / DVD & BD Label Art Specifications

Technicolor Labelart: Offset Printing Requirements

Offset Printing - An indirect printing process by which ink is transferred to the disc from a blanket that carries an impression from the printing plate, rather than directly from the plate itself. Offset printing requires the submittal of the labelart to Technicolor in an electronic file format.

For All Labelart

- Electronic templates are available from the Technicolor website at <http://www.technicolor.com>.
- A color-accurate proof is to accompany the labelart submission.
 - The supplied proof must be produced from the electronic file or film supplied to Technicolor.
 - Recommended proof output:
 - Foil stock.
 - If white stock is utilized the recommended brightness is 76% to 82% leaning cyan toward magenta.
 - 133 Lines Per Inch (LPI).
 - 5-color with white flood.
- Technicolor utilizes Sericol Offset Inks in the Offset printing process.
 - Technicolor offers PMS Coated Series Inks (Pantone Solid Coated).
 - Previous analysis and approval IS REQUIRED for special inks, clear coating or varnish.
- Choke/Spread trapping of 0.35 pt is to be applied whenever registration is critical.
- A solid white base (flood) is recommended for all 4-color process labelart.
- Clear coat application is NOT offered.

For Electronic File Submissions (digital artwork)

- Media accepted: FTP, DVD-R and CD-R.
- Submitting files via FTP:
 - Compress each labelart individually with ALL components. Include the Graphic elements (links), fonts (screen and printer fonts).
 - Provide FTP address, user name, password and the EXACT name of compressed file
- Supported Operating System: Apple Macintosh
- Supported Applications: Adobe PhotoShop CS4, Adobe Illustrator CS4, Adobe InDesign CS4, and Acrobat PDF (Hi-resolution only)
- In addition to the labelart files, provide a low-resolution PDF for color information and content reference.

For DVD-5 and DVD-9 (Single-sided DVDs) and BD

- Allowed printable area is from 20mm to 116mm (this to avoid cosmetics due to printing over the mold IFPI code).
 - If single color artwork is utilized on DVD-5, the printable area is from 46mm to 116mm due to the inner-mirror band of the disc.
- Sans Serif typeface (Helvetica, Arial, Futura) is recommended for all minimum font sizes.
- Minimum font size is 6 pt. (Sans Serif)
- Minimum font size in knockout or reversed form is 6 pt. (Sans Serif)
- Minimum font size reversed out of halftone print with a flood is 7 pt. (Sans Serif)
- Minimum line width is 0.5 pt.
- Minimum line width in knockout or reversed form is 1 pt.
- Printing a halftone image with a solid flood will alter the ink color.
- Separation tonal ranges should be no less than 15% and not greater than 85%.





CD / DVD & BD Label Art Specifications

Technicolor Labelart: Offset Printing Requirements - Continued

For DVD-10, DVD-14, and DVD-18 (Double-sided DVDs)

- Offset printing is not offered. See Technicolor Labelart: Silkscreen Printing Requirements.

For CD (Singled-sided CDs)

- For non-mold groove the allowed printable area is from 22mm to 116mm.
- For mold groove the allowed printable area is from 40mm to 116mm to avoid defective print due to the groove.
 - If CD with mold groove is required then when designing your labelart, avoid placing critical data and images within the stacking ring area.
 - Mold groove dimension: 32 mm ID x 35 mm OD.
- Sans Serif typeface (Helvetica, Arial, Futura) is recommended for all minimum font sizes.
- Minimum font size is 6 pt. (Sans Serif)
- Minimum font size in knockout or reversed form is 6 pt. (Sans Serif)
- Minimum font size reversed out of halftone print with a flood is 7 pt. (Sans Serif)
- Minimum line width is 0.5 pt.
- Minimum line width in knockout or reversed form is 1 pt.
- Printing a halftone image with a solid flood will alter the ink color.





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Technicolor Labelart Preparation Tips

The following guidelines should be followed to achieve the best printing results:

Color - Silkscreen printing on a disc is different than traditional paper printing, which may result in color difference when compared to your proof. There can be a +/- ½ shade deviation between printing on paper and printing on a disc. A disc has several different types of surfaces and the printing results may vary on each.

- Clear Plastic - Ink becomes transparent and tends to have a flat finish and/or loses color intensity.
- Metallized Area - When printing halftones, the reflection of the metal produces a shiny metallic look. When printing with a solid (PMS) color, a color change may occur.
- Inner-Mirror Band Area - Some color change may occur.

Printing a white flood will eliminate some of the differences of printing on the variable disc surfaces. A white flood will cover the metallized or clear areas of the disc and give the other applied inks a more opaque look. Colors will also be closer to what is expected. Discs printed without the use of the white flood will cause the color of the inks applied to alter. Colors may also not reproduce correctly when they are overprinted.

You should also consider not using gradual fades or "vignettes" in your labelart. Gradual fading or halftones is not recommended because dot gain and tonal jumps can occur. Technicolor can correct "hard lines" created by gradual fades during the processing of the electronic file. However, if the gradual fade is supplied in a film positive, all "hard lines" are uncorrectable and will appear on the printed disc.

Font Size (Text Size) - Minimum 6 pt. Sans Serif

Reversed Font Size - Minimum 6 pt. Sans Serif. Fonts smaller than this have a tendency to close (fill-in) during the printing process.

Reversed Font Size Knockout of Halftone - Minimum 7 pt. San Serif.

Line Width - Minimum of 0.5 pt. This includes lines on fonts, logos, and placed images.

Reversed Line Width - Width of line knocked out to silver of the disc or background should be a minimum of 1 pt.

Film Density - Opacity levels of the film positives should be between 4.5 and 5.1.

Film Quality - Film must be received without damage (Scratches, dimples, pinholes, cuts).

Trapping - Technicolor will trap all electronically supplied labelart files. If film positives are supplied, ensure that the choke/spread for all colors where registration is critical is trapped at 0.35 pt.





CD / DVD & BD Label Art Specifications

Technicolor Labelart Preparation Tips - Continued

Tonal Range - The measurement of the screen value (dot) in any given area of the labelart. Less than 15% dot range will cause image loss during the printing process. In contrast, screen values above 85% dot range may tend to blend and appear solid. This may occur in halftones, solid screen backgrounds, and graduated fades (vignettes). Tonal jumps can occur in the silkscreen printing process, along with defined lines due to an extreme variation in tonal range. As a result, avoiding large color range vignettes in silkscreen labelart is recommended.

LPI (Lines Per Inch) - The number of lines in an inch, as calculated on the screens used to create halftones and 4-color process images. The higher the line per inch, the more detailed the image will become. The Technicolor LPI standard for Silkscreen Printing is 133 LPI and Offset Printing is 175 LPI.

Moiré/Screen Interference - A pattern resulting from the use of inappropriate film and/or screen angles. When supplying film to Technicolor follow the guidelines outlined in DVD Labelart: Silkscreen Printing Requirements. Screen Interference is not true moiré. It is caused during the process of aligning the film positives over the stencil prior to exposure. Technicolor cannot remove the possibility of screen interference from customer-supplied film output at different angles than those identified in DVD Labelart: Silkscreen Printing Requirements.

Emulsion - Emulsion side up on positive film and emulsion side down on negative film.

Film Colors - Identify all specific colors in the electronic file package. If submitting film positives, clearly identify the specific PMS Coated Series Ink on each film separation.

Bleeds/Key Lines/Die Lines - Bleeds are not required when designing in a layout application such as; Adobe InDesign and QuarkXPress. When designing in Adobe Illustrator, the usage of bleeds is encouraged. If bleeds are created, use a key line or die line to identify the masking intention. Die Lines should not appear on any film positives supplied to Technicolor. However, die lines are required in the electronic file submitted to ensure proper alignment.

White Base Sizes – Preferred recommendation:

White Base Size	
ID	OD
20.5	116
22.5	115
34.5	116
23.5	116
40.2	115
27.5	116

