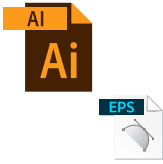# FILE TYPES

.AI

This is the native file format used in Adobe Illustrator®. It is a vector file format which means it is small in size and can be scaled up or down without limit or loss of detail. This is a very versatile file format, which can be opened with Adobe Photoshop® and CorelDRAW®. It's an industry recognized format that is used with vinyl cutters and embroidery digitizing software.

.PSD

The native file format Adobe Photoshop®. It contains both layers (transparency) and alpha channels. With this format, multilayered files can be saved along with alpha channel information. Typically, you use this file format to create artwork, and keep the original in layers, then save the final production file in a different format (.JPG or .PNG) depending on its use.

.JPG or .JPEG

JPEG, stands for Joint Photographic Experts Group. This is arguably the most used file format in the world today, and the *worst* file format to use for creating T-shirt graphics. It is a favorite format for displaying photographic images on the internet. The issue with .jpg files is its "lossy" compression format. Meaning losses to the quality of the image occur. Each time the file is closed, it's compressed and data is thrown away to make the file size smaller. This degrades the quality every time the file is open then closed. Once the loss occurs, there is no going back — the data cannot be recovered. We do not recommend using this file format for printing T-shirt graphics.

TIF (or .TIFF)

This stands for Tagged Image File Format (.TIFF). This file format is a widely-recognized format and is loss-less; therefore, there is no worry about corrupting images. It also has compression that can be used while saving. This compression won't degrade the image. This format also allows you to save multiple layers but will require the file to be much larger than it would be otherwise.

DCS 2.0*

Desktop Color Separation (DCS) is a file format important to screen printers. It retains the separations in the form of alpha channels inside it. The full color preview that it gives can be used to place the image into a drawing program and be worked with.
*(*Format is saved with .eps extension)*

.PDF

Portable Document Format (PDF), is platform independent which means it can be used by Mac or PC. The document contains a page layout and other information, it's designed to be brought or sent electronically to a printer. Where the printer opens the file and prints the intended design. All the document's information is there, so it will look like it was intended when designed. It is possible to save a PDF file from almost any standard graphics or page layout application.

.CDR

This stands for CorelDRAW® and is a commonly used file type in the industry. It only works with Corel products, most other applications do not recognize .CDR files. This file type is often used by the RIP software with vinyl cutters and print/cut systems.

RASTER VS VECTOR

When getting started in the T-shirt business, the most common question people have is "*What do I do about artwork?*" For those just starting out, the first, and arguably the most important, principle to understand is the difference between raster images and vector images.

Vector graphics are typically used for vinyl cutting and embroidery, where raster art is more commonly used among direct to garment and digital printers. It's important to know when to use each file type and to understand the differences between them.

What is vector artwork?

Vector artwork is created using a series of points, or nodes, and outlines, or paths, to create shapes which can then be filled or outlined with color. Each shape can be selected and modified individually. You can enlarge this type of artwork without effecting the sharpness of the image. It is resolution-independent, so you can move, resize, or change the colors without losing the quality of the graphic. It is the best choice to use when dealing with text, especially small type and bold graphics that need to retain crisp lines when scaled to various sizes.

Color Theory Basics

Primary Colors

Primary Colors are red, yellow, and blue.

Secondary Colors

Secondary Colors are created from mixing two primary colors making green, orange, and purple.

Tertiary Colors

Tertiary Colors: Created from mixing the full saturation of one primary color with half saturation of another primary color and none of a third primary color. (*Ex: yellow-green, or red-purple*)

COLOR TYPE

	DEFINED AS:	WHEN TO USE:
Spot Color	Creates bright vibrant results with a smaller color range.	Screen printing, print/cut systems. Easy color matching for team and corporate logos. Avoid for DTG.
Process Color	Uses four colors (CMYK) to create photorealistic results.	Best for DTG or other digital mediums. Not good for screen printing.
Simulated Process Color	Gives the illusion of full photographic color while using just spot colors.	Good for screen printing.
RGB Color	Color created by displaying red, green and blue pixels at various strengths to display secondary and tertiary colors.	Use for creating and adjusting images.
Pantone® Color	Also known as PMS (*Pantone Matching System®*) color, is the graphics industry standard color chart.	Use as spot color for screen sprinting, or as process color for digital printing. Gives accurate and reproducible results.

File Format Cheat Sheet

FILE TYPE	NAME	VECTOR/RASTER	WHAT DECORATING METHOD
.AI	Adobe Illustrator® ARTWORK FOR T-SHIRTS	Vector & Raster	Vinyl Cutting,
.PSD	Adobe Photoshop®	Raster	None Embroidery
.JPEG or .JPG	Joint Photographic Experts Group	Raster	None
.PNG	Portable Network Graphics	Raster	None
.TIFF or .TIF	Tagged Image File Format	Raster	Vinyl Cutting
DCS 2.0	Desktop Color Separation	Raster	Screen Printing
.CDR	CorelDRAW®	Vector & Raster	Vinyl Cutting, Embroidery
.PDF	Portable Document Format	Vector & Raster	Digital Printing, Print/Cut