

## **XANTÉ® Dye Sublimation Toner**

If you are new to using dye-sublimation products, read the following instructions that also are included with the toner cartridges. In addition, you may wish to watch the instructional video or attend one of our sublimation classes for hands-on training, tips on how to market your dye-sublimation products, and cost calculation examples.

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### **Sublimation Guidelines and Tips**

Use the settings in this document as guidelines for these processes. Because dye-sublimation transfers can be applied to many different materials, you may need to experiment to determine the exact settings for your particular press and substrate.

Some variables that affect transfer times are:

- Surface thickness
- Heat absorption
- Heat press accuracy (time, pressure, temperature)
- Coating variations

When transferring images that will completely cover an item, always print the transfer slightly larger than the item to which it will be transferred. This provides a margin of error when aligning everything on the heat press. Moisture and humidity often lead to undesirable results such as color shifts, bleeding, and uneven transfer. To avoid these problems, keep your paper and sublimatable items in a dry place. If you suspect moisture or wish to be proactive, try the following before applying transfers:

- Press fabrics for 5-10 seconds.
- Press most other sublimatable items for 10-20 seconds

**Note:** Be sure to place an absorbant cloth or non-textured paper towel behind the sublimatable item to absorb moisture. When transferring images, always protect both the top and bottom plattens on your heat press. Use copy paper, non-textured paper towel, or Teflon® sheets to sandwich your sublimatable item and transfer sheet between the plattens. This prevents toner from transferring onto the rubber pad and ruining future transfers.

### **Sublimation Requirements**

Because dye-sublimation toner dyes the substrate's surface, it is important to use products that are receptive to sublimation dyes. Manmade organic coatings such as epoxy, lacquer, polyester, and nylon usually sublimate well. Most metals and ceramic materials require a special polymer coating for sublimation.

Garments and caps that are printed using dye sublimation transfers must have a polyester content of 65% or greater; otherwise, the imprint will not be very bright and will wash poorly. Another consideration when imprinting T-shirts is that sublimation dyes darken the substrate. Consequently, you cannot use sublimation

to transfer an image to dark fabrics.

### Producing the Transfer

- Design the image to be transferred using a computer and graphics software.
- Print a proof of the image using the XANTÉ® ColourLaser or Colour ScreenWriter with standard laser toner cartridges.
- Print the final image as a mirrored print using high-quality laser paper and the dye-sublimation toner cartridges for your XANTÉ® printer. This printed image is the transfer.

### Transfer Process for Award Plaques

Material	ICC Profile	Temperature	Time	Pressure
Award Plaques	Wood	400° F/205° C	40-60 Seconds	Medium

- Place a sheet of copy paper, non-textured paper towel, or Teflon® on the bottom platten.
- Place the plaque face up on the protective sheet.
- Place the transfer (face down) on top of the plaque.
- Cover the back of the transfer with a sheet of copy paper, non-textured paper towel, or Teflon®.
- Press for 40-60 seconds with medium pressure.
- Remove the transfer paper.
- Place the plaque on a table to cool.

*Note:* Never use heat resistant tape on a plaque to keep your transfer in place. The tape may remove the finish from the sides of the plaque when it is removed.

### Transfer Process for Fiber Reinforced Plastics

Material	ICC Profile	Temperature	Time	Pressure
FR Plastics	Plastic	400° F/205° C	45 sec. - 1.5 minutes	Medium

Fiber reinforced plastics are used in items such as key chains, desk clocks, magnets, doorplates, sheet stock, name badges, and luggage tags. Some of these items are made for double-sided printing, while others only allow single-sided printing.

Single-Sided Items (Face Down):

- Place a sheet of copy paper, non-textured paper towel, or Teflon® on the bottom platten.
- Place the transfer face up on the protective sheet.
- Place the plastic item (face down) on the transfer.
- Cover the back of the item with a sheet of copy paper, non-textured paper towel, or Teflon®.
- Press for a minute or so with medium pressure.
- Remove the transfer paper from the item.
- Place the item on a table to cool.

Single-Sided Items (Face Up):

- Place a sheet of copy paper, non-textured paper towel, or Teflon® on the bottom platten.
- Place the plastic item (face up) on the protective sheet.
- Place the transfer (face down) on the item.
- Cover the back of the transfer with a sheet of copy paper, non-textured paper towel, or Teflon®.
- Press for 45 seconds with medium pressure.
- Remove the transfer paper.
- Place the item on a table to cool.

Double-Sided Items:

- Place a sheet of copy paper, non-textured paper towel, or Teflon® on the bottom platten.
- Place the plastic item (face up) on the protective sheet.
- Place the transfer (face down) on the item.
- Cover the back of the transfer with a sheet of copy paper, non-textured paper towel, or Teflon®.
- Press for 45 seconds with medium pressure.
- Remove the transfer paper.
- Place the item on a table to cool completely before pressing the second side.
- Repeat steps 1-7 for the second side.

*Note:* Never stack fiber reinforced plastic items while they are still hot. Place them separately on a table to cool.

**Transfer Process for Metals**

Material	ICC Profile	Temperature	Time	Pressure
Metals	Metals	400° F/205° C	1 Minute to a Minute and a half	Medium

- Place a sheet of copy paper, non-textured paper towel, or Teflon® on the bottom platten.
- Place your transfer (face up) on the protective sheet.
- Remove the plastic protective coating from the metal.
- Place the metal (face down) on the transfer.
- Cover the back of the transfer with a sheet of copy paper, non-textured paper towel, or Teflon®.
- Press for a minute to a minute and a half with medium pressure.
- Remove the metal from the transfer paper.
- Place the metal item on a table to cool.

**Transfer Process for Hardboard Products**

Material	ICC Profile	Temperature	Time	Pressure
Hardboards	Wood	400° F / 205° C	60 Seconds	Medium

- Place a sheet of copy paper, non-textured paper towel, or Teflon® on the bottom platten.
- Place the hardboard (face up) on the protective sheet.
- Place the transfer (face down) on the hardboard.
- Cover the back of the transfer with an absorbent sheet of non-textured paper towel.

- Press for 60 seconds with medium pressure.
- Remove the transfer paper.
- Place the item on a table to cool.

*Note:* For best results, press hardboard face up with an absorbent paper towel on top of the transfer.

### Transfer Process for Mouse Pads

Material	ICC Profile	Temperature	Time	Pressure
Mouse Pads	Fabric	400° F/205° C	45-60 Seconds	Medium

- Place a sheet of copy paper, non-textured paper towel, or Teflon® on the bottom platten.
- Print the transfer image slightly larger than the mouse pad's dimensions.
- Pre-Press the mouse pad for 20-30 seconds.
- Place the mouse pad on the transfer.
- Tape the transfer from end to end to prevent shifting and ghosting.
- Place the mouse pad with the attached transfer face up on the protective sheet.
- Cover the back of the transfer with a sheet of copy paper, non-textured paper towel, or Teflon®.
- Press for 45-60 seconds with medium pressure.
- Remove the transfer paper.
- Place the item on a table to cool.

### Transfer Process for Ceramics

Material	ICC Profile	Temperature	Time	Pressure
Ceramic Tiles	Ceramic	400° F/205° C	3-12 Minutes	High

*Note:* Transfer times vary depending on the item's size.

Item	Transfer Time
2" x 2" Tile	3 Minutes
4" x 4" Tile	6 Minutes
12" x 12" Tile	12 Minutes

- Place a sheet of copy paper, non-textured paper towel, or Teflon® on the bottom platten.
- Place the transfer (face up) on the protective sheet.
- Place the tile (face down) on the transfer.
- Cover the back of the transfer with a sheet of copy paper, non-textured paper towel, or Teflon®.
- Place the green heat conductive rubber pad over the tile to cushion it so it does not break under the heavy pressure.
- Press with heavy pressure using the recommended times from the chart above.
- Remove the tile from the transfer carefully.
- Place the tile on a table to cool.

*Note:* You can press more than one tile at the time as long as you have two or more inches of empty space

surrounding all four sides of the tile. This spacing ensures full coverage for each tile.

### **Garment Printing Guidelines and Tips**

Traditional color laser and ink jet printed transfers use heat to "melt" an image onto the surface of the garment, resulting in a heavy, "decal-like" transfer that can fade, crack, or discolor and only may be washed under special conditions. Because XANTÉ® uses dye- sublimation toner, rather than a special transfer medium, there is no "hand" or raised feeling to the image.

The garment is in essence "tattooed" with the image. The "tattooing" occurs when heat and pressure are applied to a dye sublimation transfer and substrate using a heat press. During the process the polyester fibers open and the sublimation toner becomes a gas and infuses the polyester fibers. Once the heat and pressure are removed, the fibers close, trapping the ink. The result is a permanent, "no-hand" image that allows the fabric to retain its original soft, comfortable feel.

When printing garments, they must be prepared prior to the transfer process. Use a lint-roller brush on the garment surface that will come in contact with the heat press to remove any lint, dust, or loose fibers that may have settled on the fabric. Be sure to eliminate any moisture in a garment by pre-pressing it for 5 seconds before applying a transfer.

Do not shortcut heat press time. A shortened press time does not allow the sublimation dye to completely penetrate the garment fibers. This leaves the dye more susceptible to wash out. Do not reduce the heat press time below 30 seconds.

Do not press garments too long. Longer press times and/or higher temperatures can cause the dye molecules to penetrate too deeply into the fabric, resulting in reduced image vibrancy. In addition, higher temperatures and press times can scorch or yellow a garment permanently. Do not exceed 45 seconds transfer time or 410° F/210° C transfer temperature.

Blow-through occurs when the dye molecule penetrates one side of a garment and transfers to the opposite side. This can occur when images have high toner densities. To prevent blow-through, insert a Teflon® or cardboard sheet between the front and back of the garment.

Keep your heat press clean. Residual toner on the heat press can result in unwanted "stray" transfers on a garment. To minimize the effects of dye that can build up on your platen over time, periodically press scraps of white fabric or paper towels to remove the build up.

Ghosting, which is the appearance of a faint double transfer of your image, can occur when the paper transfer shifts slightly as the pressure is released in your press. To prevent ghosting, try using heat resistant tape to secure your paper transfer to the shirt. You also can prevent ghosting by allowing a portion of the paper transfer to extend outside the press during heating and immediately pulling out the paper transfer as soon as the pressure is released.

When printing golf shirts you will be more pleased with the results if you press only the upper left chest area, instead of the entire front (as you would a T-shirt). Let the buttoned placket fall off the side of the press so that it does not come in contact with the heated platen.

### **Transfer Process for Garments**

<b>Material</b>	<b>ICC Profile</b>	<b>Temperature</b>	<b>Time</b>	<b>Pressure</b>
T-shirt	Fabric	400°F/205°C	30-45 Seconds	Medium
Sweatshirt	Fabric	400°F/205°C	30-45 Seconds	Light

- Remove any lint, dust, or loose fibers from the garment.
- Pre-Press the garment for 5 seconds to eliminate any moisture.

- Place a sheet of copy paper, non-textured paper towel, or Teflon® on the bottom platten.
- Place the garment (face up) on the protective sheet.
- Place the transfer (face down) on the garment.
- Cover the back of the transfer with a sheet of copy paper, non-textured paper towel, or Teflon®.
- Press for 30-45 seconds using the recommended pressure from the chart above.
- Remove the transfer paper.
- Place the item on a table to cool.