



SolarFast™ FAQs and Troubleshooting

FAQs

Does SolarFast have to be wet to develop, or can I make dry prints?

SolarFast works best if exposed while wet. Exposing prints after the dye has dried will yield paler colors in most cases. Some colors work better than others for dry printing. In general, the warmer colors work best for dry printing (Red, Orange, etc.). Always test first. Remember to store coated fabric or paper in a dark place.

How many prints can I get out of 4oz of SolarFast dye?

Generally speaking, you will get 1 to 3, 8.5" x 11" prints per ounce of dye, depending on the absorbency of the fabric. On paper, the dyes generally go much farther: you can expect to get 3-6 prints per ounce of dye. For more coverage and better economy, dilute SolarFast with water. You can dilute the dyes up to 1:1 without losing much depth of shade.

Can I thicken SolarFast dyes? Can I screen print with it?

Thicken SolarFast to inhibit bleeding, for better control or for screen printing applications. Use 1 tablespoon SolarFast Thickener per 4oz of SolarFast dye (see instructions on the product page). Sodium Alginate, Super Clear or other thickeners may also be used to increase the viscosity of SolarFast dyes. SolarFast is terrific for screen printing—it never dries in the screen, it leaves fabric completely soft and no heat setting is required. You can use it like any other screen ink, or to superimpose continuous tone images onto your screen prints. Screen printing is also an excellent way to apply SolarFast quickly and regularly for production runs or high volume printing.

Can I thin my SolarFast dyes with water?

SolarFast can certainly be thinned with water. This may be desirable if you want to spray SolarFast through a mister, spray bottle or airbrush, if you want to apply the dye by dipping or if you prefer to work with thinner colors.

Will adding water to SolarFast affect the depth of shade?

Most SolarFast colors can be diluted 1:1 with water without significantly affecting the depth of shade. This is a great way to get more economy from your dye. Adding more water than this will produce lighter shades, but may also affect exposure times and performance. Always test first.

I want to be able to see the dyes better while I'm working with them. Is there a way to add color before exposing?

If you would like to be able to see the dyes better while working with them, add a colorant that will not stain the fabric you are working on. We recommend PearlEx or iDye Poly. You may also use food coloring, a small amount of paint or dry pigment.

Can I reuse my negative?

Absolutely. You can use your negatives over and over again to make as many SolarFast prints as you like. Just be sure not to scuff or wet the print side of the film. Clean the waterproof side of the film (the side that comes in contact with the dye during exposure) after each print by wiping it with a damp rag or towel. If you allow the dye to dry on the film, it may become difficult to remove. A small amount of alcohol may help.

Can I use artificial light to make SolarFast prints?

SolarFast develops with UV light. The sun is the ultimate source of UV, but there are many bulbs on the market that can be used indoors that output sufficient UV to make a good print. Exposure units like they use in screen printing shops, for example, work well. Sun lamps, grow lights and high energy black lights may also work well. Exposure times will depend on the bulb's UV output. Always test first!

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Do I have to wash my prints immediately after making my exposure, or can I wait until I have a pile of them and wash them all at once?

We recommend washing your prints as soon as you take them out of the sun. This will produce the best results. Be sure to bring your prints inside, away from sunlight, before removing your negative. If you let your print sit for too long before washing, you may lose some of your highlights. The longer you wait, the more difficult it will become to remove the undeveloped dye. If you do decide to wait, be sure to keep your print someplace dry and out of the light. Alternatively, you can submerge your prints in a bucket of water, away from light, until you are ready to wash them.

Can I wash more than one print at a time?

If you are planning on washing several prints at once, or if you are washing prints of different colors simultaneously, you may want to hand rinse before washing. This can help reduce back staining.

My SolarFast Film looks cloudy instead of clear. Is this normal?

Yes. SolarFast Film is specially coated to produce maximum-density negatives, but the coating makes the film appear translucent. This “cloudy” look may be accentuated during exposure as the film is exposed to moisture. This is normal: no matter what it looks like, the film will always pass UV light. Don’t worry! Your prints will look great, even if your film looks cloudy.

What materials can I use with SolarFast?

SolarFast is permanent on any natural fiber, including cotton, linen, hemp, wool, silk, canvas, leather, bamboo and wood. It will not work on synthetic fabrics, plastic or rubber, or non-absorbent surfaces such as sealed wood, glass or metal. Being a true dye, you may find that the same color can look markedly different on different fabrics. This is normal and is to be expected from any dye system.

Can I make photographic prints on silk?

If printing on silk, SolarFast Wash and HOT water are highly recommended. Silk is a highly magnetic fiber and it is particularly difficult to remove undeveloped dye from silk fabric. Wash diligently and test first.

Can I mix SolarFast Colors?

All the SolarFast colors are intermixable. You may mix them together before application, or you may mix them directly on the substrate (multi-color prints look pretty neat!). SolarFast develops its final color with exposure to light, so mixing a desired color may be challenging. For consistent results, measure carefully and test first. For paler shades, dilute with water.

Are SolarFast dyes supposed to be colorless in the bottle or not?

Each color is different. Most SolarFast colors are essentially colorless in the bottle. Many are slightly tinted, and some appear more opaque or “milky” than others. That said, there are few colors that exhibit color before exposure. This is normal: if used properly, this color will wash out, leaving white wherever development is blocked by an object or negative. The SolarFast colors you can expect NOT to be colorless in the bottle are: Golden Yellow, Green, Teal, Avocado, Sepia and Black. All these colors are yellowish in the bottle and may require extra diligence when washing.

Can I print my negative on paper instead of a transparency?

Printer paper isn’t generally transparent enough to make a good print. Here’s a good trick, though: after printing your negative on paper, coat it with vegetable or baby oil. This will make the paper transparent while leaving the black areas opaque. You can then place the paper negative on your substrate to make a print! Just be careful not to get your substrate too oily, as this may interfere with development. This is an experimental method, so test first. Because the paper will not be entirely transparent, exposure times must be increased by at least 15%.

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Will SolarFast change the feel of my fabric?

Not at all! SolarFast is a true dye, which means it will not affect the hand of fabric whatsoever: your fabric will remain completely soft to the touch.

Will my print look different after I wash it?

Often times, yes. In general, you won't know your final result until your print has been washed and dried. In many cases your highlights will become brighter after washing (your white areas will become whiter). This is especially true when printing with Golden Yellow and the other colors that have yellow in them: highlights will whiten significantly with washing. Other colors, such as Blue and Black, will not be fully developed until after washing in hot water (they become bluer or blacker during the washing process).

Do all the SolarFast colors behave the same?

Yes and no. Different colors require different exposure times. Each color also looks different in the bottle: some are colorless, some are milky, some are colored, and some are transparent (see our "SolarFast Exposure and Color Details" doc for more info). Some colors look different after washing, while some colors develop completely during exposure. Aside from these incidental differences, all the SolarFast colors have identical properties.

Does SolarFast Black produce neutral greys and blacks?

SolarFast Black is not a homogeneous color: it is a blend of several different colors. For this reason, it can produce either neutral, warm or cool blacks, depending on the substrate, exposure time and exposure conditions. Do a test first so you know what to expect. Black requires much longer exposure times than the other colors, and in general, the longer it is exposed the more neutral the greys and blacks will be. For best results, make sure the substrate is adequately wet with dye before exposing, and expose until the dye is completely dry.

Do I need a negative to make a SolarFast Print?

There are a ton of fun and exciting ways to use SolarFast without a photographic negative. SolarFast is a light developed dye, and is great for negative-free applications like tie dye, batik, serti, or fabric painting—just apply the dye and expose it to sunlight, no heat setting, chemical or steam setting required. You may also use household or natural objects (leaves, tools, string, utensils, etc.) to make sun prints and photograms with SolarFast, or create a hand-made negative by drawing or painting directly onto a transparency. There are no rules. Experiment!

How do I clean up SolarFast?

Clean SolarFast with soap and warm water.

Can I use SolarFast on printed material or fabric that is already colored?

SolarFast may be used on any light colored natural material, including pre-dyed fabrics, patterned fabrics or found papers. The only thing you need to remember is that SolarFast is a dye and therefore transparent. This means your substrate must be lighter than the dye you are using (the dyes will not show up on a black or dark background), and color will be additive. Using Golden Yellow SolarFast on a blue fabric, for instance, would produce a green print.

Can I make a SolarFast print on black fabric?

Unfortunately, not without an extra step: SolarFast is a transparent dye, so it will not show up on dark or black grounds. The best way to make SolarFast prints on black fabric is to discharge or bleach out a portion of the fabric prior to printing (Jacquard's Discharge Additive is not compatible with SolarFast dyes). Use Discharge Paste, bleach or Jacquard Discharge/Reduction Agent to white-out an area of the black fabric roughly the same size of your planned SolarFast print. This will create a window of white or light fabric within the black ground that SolarFast will have no problem showing up on. Wash out the bleach or discharge chemical prior to applying SolarFast. This is a great way to make SolarFast prints on black fabric!

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What is the shelf life of SolarFast dyes?

SolarFast has a shelf life of up to two years when stored in a cool, dark environment. Once opened, the dyes last 6 months. Refrigeration is an effective way of prolonging the shelf life of SolarFast dyes, but avoid freezing. Exposure to heat, light and air may decrease the shelf life of SolarFast dyes. Over their usable life time, SolarFast dyes will not dull or weaken: the colors will always be bright and intense.

Troubleshooting

If prints are too light/pale: Your print probably needs more light. Make sure you are exposing in direct sunlight. You may have to expose longer for deeper colors. And remember, the **best time to make prints is between 11am and 3pm, when the sun is high overhead.** Prints made earlier or later in the day may require longer exposure times. If conditions are cloudy or overcast, exposure time should be doubled. Overly-dense negatives may also produce pale prints—make sure your highlights are truly transparent! If you are using glass or plexi, make sure it is not UV-absorbent (museum glass is designed to filter out UV light, so it will only cause problems). If your dye is too dry during exposure, this can also result in pale prints. Be sure to expose while the dye is still damp.

If prints are too dark: You may be over-exposing, or your negative may not be dense enough. Try exposing for less time, or try doubling your negative for more density/contrast. Remember, your negative should be completely opaque in its darkest areas. If it is not, adjusting your printer settings may help. You might also try running the same piece of film through your printer more than once for a denser negative. Another cause of dark prints is unwanted exposure: make sure not to expose your print to light before placing your negative or after removing it. Always work in subdued lighting, before and after printing!

If the light areas are still developing after washing: This means there is still undeveloped dye in the substrate that hasn't been washed out. After printing, make sure to wash your paper or fabric in HOT water with SolarFast Wash. If washing in the machine, you may want to run two cycles. If hand washing, keep your print in hot, running water for at least 10-15 minutes. If you live in a place with hard water, a water softener may help. Also, be sure to wash your prints immediately after exposing: the longer you wait to wash them, the more difficult it will become to remove the undeveloped dye.

If print looks blurry or if detail is disappearing: This is usually an issue with contact. You must have good contact between your film and your substrate, or you will lose detail and get fuzzy or blurry lines on the resulting print. Make sure to print on a hard, flat surface. Using a piece of glass to keep the film flush can be helpful. You may also want to clamp the glass to the board behind the substrate: this added pressure will ensure flush film and will produce optimal detail resolution in the resulting print. Blurry prints may also be the results of shadows: if the sun is too low in the sky, and your print surface is flat, the negative may cast a shadow. To avoid shadows, make sure to print when the sun is high, or to angle the print surface so it is facing the sun during exposure. Blurry prints can also be the result of condensation forming under the negative during exposure. Be sure to blot the dye prior to placing the negative so it isn't too wet.

If print looks blotchy or mottled: This can happen if the substrate is too wet during exposure. Dye can stick to the negative and get lifted off the fabric, resulting in blotches. Make sure not to apply too much dye, and to blot if the substrate seems too wet. Mottled prints may also be the result of condensation forming between the film and the substrate. Again, this can be resolved by making sure the substrate isn't too wet. Keeping the film and substrate flush will also help (consider using clamps or clips).

If you spill SolarFast or get it where you don't want it: SolarFast isn't permanent until it is developed in UV light. If you get dye somewhere you don't want it, the best thing to do is rinse it out immediately. Use warm water and a small amount of SolarFast Wash or Synthrapol. Alternatively, you can cover the dye with something opaque to keep it from developing during exposure. This is a great way to get rid of drips and fingerprints before it is too late!

Troubleshooting

If you are seeing back staining or migration of color during washing: To avoid back staining during the initial wash, make sure to wash with hot water and SolarFast Wash. You may also want to hand rinse prior to machine washing. This will remove the bulk of the excess dye before the wash, which will reduce the risk of back staining.

Trouble with SolarFast Golden Yellow, Green, Teal, Avocado, Sepia and Black: All these colors are formulated with yellow dye, which is the one SolarFast color that exhibits color prior to exposure. These colors are yellow right out of the bottle, in other words, whereas the rest of the SolarFast colors are essentially colorless until they develop. This makes it particularly difficult to achieve truly white highlights: the yellow color can stain and be difficult to remove, resulting in prints with poor contrast or a yellowish tint. To avoid this, be sure to wash with HOT water and SolarFast Wash. You may want to run two cycles, if machine washing. You may also want to hand rinse prior to washing: this will remove the bulk of the excess dye and reduce the risk of back staining; it will also ensure whiter whites. It is also especially important to wash your prints immediately after exposing when using these colors. Yellow develops quickly, so be sure not to expose the dye to light before placing your negative or after removing it. Dialing in the exposure time is also particularly important with these colors: over-exposure will produce bluer-than-desired greens, for example, and may result in poor contrast.