

## **Cyanotype FAQs**

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#### What is cyanotype?

Cyanotype is an antique photographic printing process distinctive for producing Prussian blue monochromatic prints. Developed in the mid-19th century, cyanotype was quickly embraced as an inexpensive method for reproducing photographs, documents, maps and plans (hence the enduring architectural term "blueprint"). Famously, it was also used by Anna Atkins and other field biologists for indexing plant specimens—the first photograms ever made! Cyanotype is an extremely forgiving photographic process, easy to do, safe and inexpensive. As one of the earliest photographic processes ever developed, it is still favored among alternative process enthusiasts and is often the first chemistry explored in alternative photo classes.

#### Is it permanent?

Yes, cyanotype prints are archival. However, yellowing may occur if prints are exposed to phosphates or alkaline environments so, cyanotype fabrics must be laundered in cold water using non-phosphate detergents. Over-washing may also cause the print to fade. Use care while handling cyanotype prints, as sweat and hand oils may also cause discoloration. If fading occurs over time, washing the print in a dilute bath of hydrogen peroxide can usually restore it to its original intensity.

#### Is Jacquard's Pretreated Cyanotype Fabric sided?

Prints can be made on either side of Jacquard's Pretreated Cyanotype Fabrics. However, being a cotton sateen, the sides are different. One side of the fabric is slightly reflective and shiny. This is the print side. Look closely at the fabric to determine which side is the print side.

### Can I make cyanotype prints on paper and fabric? How about wood?

Yes, any natural surface can be treated with the cyanotype sensitizer, including silk, cotton, wool, hemp, linen, canvas, paper, leather and wood.

## Can I make cyanotype prints on polyester?

As polyester is not a natural fiber, it generally cannot be used for cyanotype.

### How should I wash my cyanotype fabric prints?

Keep washing to a minimum if possible. We recommend hand-washing in cold water using a non-phosphate detergent. Do not use Synthrapol or SolarFast Wash.

## Does cyanotype only produce blue prints? What about other colors?

An unadulterated cyanotype will always be blue. However, there are many methods for toning finished cyanotype prints to other colors using household materials like tea, coffee and soap. Cyanotypes can be toned to a variety of browns, blacks, yellows and more. See our "Toning Cyanotype Prints" document for more information. For sun printing with a full range of colors, use SolarFast.

## What is the difference between cyanotype and SolarFast?

SolarFast is a true dye, so the two are very different. See our document "Cyanotype vs. SolarFast" for detailed information about these differences. The main differences are:

- 1. Cyanotype is used dry, so treated substrates can be stockpiled and packaged, whereas SolarFast must be used while damp, directly after coating.
- 2. Cyanotype has a greater range of tones than SolarFast, though the color range is significantly more limited (cyanotype is always blue whereas SolarFast is available in 14 colors).

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- 3. Cyanotype is not as washable and permanent as SolarFast is on fabric.
- 4. Cyanotype is inexpensive and goes further than SolarFast.
- 5. In many ways, cyanotype is more forgiving and easier to use than SolarFast.

#### Is it dangerous?

Cyanotype is non-toxic and does not present any significant health risk or danger. That said, care should always be taken to avoid ingestion, inhalation and contact with skin when handling the cyanotype chemicals and fabrics.

#### Is it safe for children?

Yes, cyanotype is safe for children and makes a great classroom activity! That said, care should always be taken to avoid ingestion, inhalation and contact with skin when handling the cyanotype chemicals and fabrics. Adult supervision is highly recommended.

#### How does it work?

This may be more of a technical answer than you are looking for, but this is how the cyanotype reaction works on a molecular level:

All ferric (iron III) salts become sensitive to light when combined with organic substances. Ferric ammonium citrate, which has the chemical formula  $C_6H_8FeNO_7$ , is one such substance. This light-sensitive compound is mixed with potassium ferricyanide and water to create the cyanotype sensitizer, and this mixture is used to coat a surface such as fabric or paper. Exposure to ultraviolet light breaks down the iron compound by oxidation, thereby releasing carbon in the form of carbonic acid and creating a new iron compound. The exposed print is then immersed in water, causing a reaction between the new iron compound (peroxide iron salt) and the potassium ferricyanide. A deep-blue compound, ferric ferrocyanide or iron (III) hexacyanoferrate (II), is formed within the substrate fiber. The more light the sensitized substrate is exposed to, the more of this blue is produced.

#### What is the cyanotype formula?

- Solution A: 20% ferric ammonium citrate in water
- Solution B: 9% potassium ferricyanide in water

A : B = I:I = final solution, also known as the cyanotype sensitizer.

### Can you screen print with cyanotype?

Yes, the cyanotype sensitizer can be thickened for screen printing using the SolarFast Thickener. Screen prints may then be exposed to light, with or without film or objects on top, and processed in water as normal.

### Can I paint or print on top of a cyanotype print?

Yes, embellishing prints with dyes, paints or markers is a great way to add color to a cyanotype. However, if the paint or dye has a high pH, the blue color of the cyanotype beneath may fade or disappear completely. Experiment to see what the different effects of over-coloring are.

## Can I make cyanotype prints on patterned fabric or found paper?

Yes, like a dye, cyanotype is transparent, so anything beneath the blue of the print will show through. Printing on top of patterns, pages of books, newspaper, etc. is a great way to create a layered image.

# Can cyanotype prints be made on colored fabric or paper? How about black substrates?

Like a dye, cyanotype is transparent, so printing on colored substrates will have an additive effect. Printing on a yellow fabric will produce a green on yellow print, for instance, instead of blue on white. Printing on red will produce a purple on red print, etc. Prints made on black substrates will not show up.

Have other questions? Contact Jacquard at service@jacquardproducts.com or 800.442.0455