Cyanotype
Detailed Instructions

Cyanotype Formula, Mixing and Exposing Instructions

START HERE *if you have* **Open Stock Chemistry**

1. Dissolve 40 g (approximately 2 tablespoons) Potassium Ferricyanide in 400 ml (1.7 cups) water to create STOCK SOLUTION A. Allow 24 hours for the powder to fully dissolve.
2. Dissolve 100 g (approximately .5 cup) Ferric Ammonium Citrate in 400 ml (1.7 cups) water to create STOCK SOLUTION B. Allow 24 hours for the powder to fully dissolve.

START HERE *if you have the* **Sensitizer Set**

If using the Cyanotype Sensitizer Set, simply fill each bottle with water, shake and allow 24 hours for the powders to dissolve.

3. In subdued lighting, mix equal parts SOLUTION A and SOLUTION B to create the cyanotype sensitizer. Mix only the amount you immediately need, as the sensitizer is stable just 2-4 hours.
4. Coat paper or fabric with the sensitizer and allow to air dry in the dark. Paper may be double-coated for denser prints. Fabric may be coated or dipped in the sensitizer.

START HERE *if you have* **Pretreated Fabrics**

Jacquard's Cyanotype Fabric Sheets and Mural Fabrics are pre-treated with the sensitizer (as above) and come ready to expose.

5. Make exposures in sunlight (1-30 minutes, depending on conditions) or under a UV light source, placing objects or a film negative on the coated surface to create an image. *(Note: Over-exposure is almost always preferred to under-exposure.)* The fabric will look bronze in color once fully exposed.
6. Process prints in a tray or bucket of cool water. Wash for at least 5 minutes, changing the water periodically, until the water runs clear. Do not use soap. With wetting, the print will change from a bronze to blue color. To instantly process prints to the final deep blue color, submerge washed prints in a dilute solution of hydrogen peroxide, then rinse.
7. Air-dry the prints on a clean clothesline or on newsprint or blotting paper. If peroxide was not used in step 6, prints will slowly oxidize to their final, deep blue color over the course of about 24 hours.

NOTES:

- Use distilled water if your tap water is hard.
- The stock solutions are stable long term and can be used to create the cyanotype sensitizer whenever you are ready to coat a substrate.
- Mold growth may occur in the Ferric Ammonium Citrate solution (STOCK SOLUTION B) over time. This will not affect the performance of the chemistry. Skim off any mold or decant the solution through a coffee filter before use.
- Sensitized paper or fabric may be stockpiled and stored. Use within 6 months for best results. Store in a cool, dry environment, preferably in a sealed bag to avoid oxidation.
- Coated paper and fabric may darken over time. If it appears dark, it is not necessarily expired; test it—it may just require a longer rinse in hotter water.
- Cyanotype prints are archival. However, yellowing may occur if prints are exposed to phosphates or high pH solutions. Cyanotype printed fabrics should always be laundered in cold water using non-phosphate detergents. Use care while handling cyanotype prints, as sweat and hand oils may also cause discoloration.
- Do not wet fabric or paper before or during exposure. Make sure your hands are dry when handling the sensitized fabric or paper. Make sure the printing surface and objects used are dry.
- Cyanotype fabric can be ironed before exposure—just make sure to use a dry iron that does not spit or leak water. Iron the backside (not the print side) and use care while handling.

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Creating Images

A **photogram** is a print made by placing objects on the sensitized surface. Photograms can be made from any object that casts a shadow or blocks the light—plants, leaves, toys, tools, stencils, stones, sand, cutouts, string, lace, doilies, etc. You can even place your hand on the print surface for the duration of the exposure to make prints of your hands. With the mural fabric, you can lay on the fabric during exposure to make full-body prints.

Make **photographic prints** by first creating a film negative. To easily transform any image into a film negative to create photographic cyanotype prints, visit Jacquard's online Negative Generator at www.JacquardCyanotype.com. Negatives may be printed through any inkjet or laser printer onto transparent film or acetate media such as Jacquard's SolarFast Film.

You can also make prints from line **drawings** by drawing directly on the film using Jacquard's Film Marker.

Place a piece of glass or acrylic on top of the print to keep objects or negatives flush and keep them from moving during exposure. You may also use pins, magnets, tape, a printing frame, etc. to secure the film during exposure. NOTE: Pure acrylic sheeting allows UV light to pass through and can be used to expose cyanotype just like glass, but many types of acrylic, like Plexiglass, have UV blockers that can prevent or reduce exposure.

Trouble Shooting

Blurry or out of focus photographic prints:

Using a film negative to make cyanotype prints is a contact printing process. The film must be flush on the print surface for optimal resolution and detail. Otherwise, the print may appear out of focus or blurry. The easiest way to ensure good contact is to print on a flat surface and place a heavy piece of glass on top.

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Prints should also be facing the light source perpendicularly during exposure—if the sun is not directly overhead, this may make it necessary to use binder clips to hold the substrate, film and glass together.

Dark blue or blown out prints:

The dark areas of the film may not be dense and opaque enough to block the light adequately. To achieve good contrast on the print, the negative must be dense enough that it completely blocks the light in its darkest areas. Stacking two negatives may be the best solution—this will double the opacity and contrast. The print may also be over-exposed. Try reducing the exposure time.

Pale or low-contrast prints:

The print was probably not exposed long enough. The light source may not be intense enough. Or the negative may be too dark. Over-washing can also result in pale prints.

Water spots:

The print may become splotchy if you touch it with damp hands. Sometime leaves or design elements can produce moisture during exposure. You may also have splashed or dripped on the print prior to washing. Make sure when you submerge the print in water, you do so swiftly and without splashing.

Discoloration to brown or yellow:

Discoloration may occur if the print is exposed to phosphates, soap or dirty objects. Make sure the drying line/surface and clothespins are clean. Make sure the washing tub or tray is clean and free of soap. Only handle prints with clean hands.

Prints darken during drying:

The print was probably not thoroughly washed. Make sure the water runs clear before hanging to dry. Do not dry in direct sunlight.

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