ZEBRA DRY PLATES

THE NEW CYANOTYPE KIT -USER MANUAL

1. Introduction

The cyanotype process, originally developed by Sir John Herschel in 1842, underwent significant improvements, ultimately leading to the creation of the commercial Blueprint. Recognizing its limitations, Mike Ware introduced the 'New Cyanotype' in 1995. This updated version features a convenient single-bottle sensitizer with an extended shelf life, minimal UV exposure requirements, a stable Prussian blue pigment, an enhanced tonal scale, and adaptability to various surfaces.

First of all thank you for choosing Zebra - The Cyanotype Formula. The 100ml solution provided can produce approximately 50-70 8x10in prints using a road coating technique or 30-40 prints of the same size with a brush coating technique. Before you embark on the process, carefully review and comprehend the following instructions. Ensure strict adherence to safety precautions and exercise basic common sense while handling all chemicals.

2. Safety & Handling Guidelines

Every substance in this kit demands respect due to its potential hazards. Please carefully review the chemical warnings on the package. When handling Cyanotype solutions, coating the paper, and processing exposed images, always wear the provided plastic or latex rubber gloves. The solution should be treated as poisonous, and refrain from storing it in a refrigerator used for food or drinks. The solution maintains stability at room temperature and possesses a shelf life of approximately 1 year from the purchase date when stored in its original separate containers.

The Cyanotype solutions included in your kit are specifically sensitive to ultraviolet light and can be managed in standard room lighting conditions without the need for

a safelight. Throughout the entire Cyanotype process, normal incandescent lighting is suitable. While fluorescent lights are permissible, it is advisable to minimize the exposure of chemicals and coated paper to them to reduce the risk of image fogging. For optimal results, work in a windowless room or shade any windows in your workspace.

3. Selecting a Negative and the Paper

To proceed with the Cyanotype process, acquire either an object or a film/glass/foil printed negative matching the size of your final image. This negative is then printed in direct contact with the dried Cyanotype-coated paper under intense UV light.

The new cyanotype sensitizer serves as a sensitive test for paper quality, particularly if the coated paper is left in the dark at normal relative humidity for some hours. Any change in the lemon-yellow coating toward green or, worse, blue signals impurities or additives in the paper that may hinder the process. Opt for a paper with minimal additives, such as Buxton or Silversafe, for optimal results.

4. Preparation of the workspace & tools

Establish a well-ventilated, well-lit, and organized workspace conducive to the Cyanotype process. Opt for a level counter, workbench, or a spacious table with a hard, smooth surface for paper coating. As Cyanotype solutions may stain wood, metal, and various plastic surfaces, safeguard the chosen surface with a plastic bag or, preferably, newspapers to absorb any excess solution.

If using a brush for coating, reserve it exclusively for Cyanotype printing to prevent contamination from other alternative process chemistries. Alternatively, a glass coating rod, when properly washed between uses, can serve for multiple handcrafted processes.

Prepare 1 or 2 trays for processing the exposed image at a later stage.

Light Source Options: While strong sunlight is ideal for exposing cyanotypes, it's not always available. If you prefer more control over exposure, ultraviolet fluorescent lights are a great alternative. Check out our YouTube channel, Lost Light Art, for a video tutorial on creating an exposure box using UVLEDs.

For optimal contact between the object/negative and sensitized paper, we suggest using a contact printing frame, vacuum frame, or two sheets of plate glass to ensure proper registration. In these instructions, we assume the use of a split-back contact printing frame, allowing for image inspection during exposure.

5. Sensitizer Application and Drying

Secure a piece of paper to your coating table by taping its upper corners using paper tape or masking tape. Position your object/negative on the uncoated paper and outline the four corners with a pencil. This serves as a guide for coating, ensuring the solution is concentrated within the image area.

Before handling the sensitizer, be aware that the New Cyanotype formula is highly sensitive to UV light. Therefore, avoid exposure to UV light sources like sunlight and fluorescent light. You can safely work with the sensitizer under tungsten lights.

Utilize the provided pipette to measure the required amount of solution for coating and transfer it to a small glass, ceramic, or plastic cup. Unlike the traditional cyanotype process that involves mixing A & B solutions, the New Cyanotype Formula comes ready for coating.

For an 8x10in paper using a glass rod coating technique, you'll need approximately 2ml of sensitizer. If employing a brush coating technique, aim for around 3ml of sensitizer as a reference.

Using a Brush:

1. Wet the brush with distilled water and blot it on a paper towel to remove excess water.
2. Pour the measured Cyanotype solution onto the center of the image area.
3. Spread the solution horizontally with light pressure, then switch to vertical strokes.

4. Continue alternating between vertical and horizontal strokes until the solution absorbs into the paper.
5. If still spreading after 30 seconds, reduce the coating solution by 1/4 to avoid over-brushing.

Using a Coating Rod:

1. Pour the measured Cyanotype solution along one edge just outside the image area.
2. Place the coating rod in the middle and wiggle it to evenly distribute the solution.
3. Apply light pressure and pull the rod across the image area, lifting at the edges.
4. If making more than 6 passes, reduce the coating solution by 1/4.
5. If a solution line remains after 10 passes, gently blot with a paper towel to remove excess.

Expose the coated paper within a few hours for optimal results. Whether heat-dried in warm air for a few minutes or left to dry at room temperature for at least half an hour, the storage life depends on the paper's purity. Storing it in a desiccated enclosure extends its shelf life. The coated side should maintain a yellow or yellow-green color; any shift to blue indicates chemical fogging in the highlights, requiring rejection and the use of a better paper.

To prevent impurities from causing the coating to turn green or blue during drying, consider adding 2% citric acid to the sensitizer solution just before coating. Create a 40% stock solution of citric acid and add 1/20th of its volume to the sensitizer solution.

6. Exposing the Image

Exposure for this New Cyanotype Formula is significantly shorter than the traditional cyanotype recipe, requiring about one minute in bright sun or four minutes under a typical ultraviolet light source. The image darkens during exposure, eliminating the need for a separate development stage. Continue the exposure until high values

appear pale green, mid-tones are blue, and shadow tones are starting to ‘reverse’ to a pale gray-blue, giving the image a partly solarized appearance.

Using a traditional split-back contact printing frame allows artists to inspect the image during exposure without disrupting the registration between the object/ negative and paper, which is crucial, especially in variable natural sunlight.

To begin, place the object/negative inside the print frame, ensuring it's centered and not reversed. Carefully position the dried Cyanotype-coated paper face down, covering the object/negative. Install the felt-lined hinged back and lock the springs. Expose the frame to your UV light source or direct sunlight, observing the emulsion-coated area outside the object/negative darkening. This initial blue color is non-archival and will wash away, so over-expose the Cyanotype for a permanent image.

After 1 minute, inspect the print by opening one leaf spring, exposing the backside. If needed, continue exposing, inspecting every few minutes until the image begins to reverse and lighten. Judging the proper time to remove the print from the light is crucial for a successful Cyanotype process.

7. Print Washing & Drying

The exposed paper can be treated by gently rinsing it under tap water for at least twenty minutes or using multiple static baths. The water used should have a pH below 7 and not be significantly alkaline to avoid damaging Prussian blue. It's crucial to steer clear of 'hard' water containing calcium ions.

For a more robust outcome, a 'development' bath with a very dilute mineral acid can be employed. Achieving a deeper maximum density requires a longer printing exposure range of about 2.4. Optimal results come from hydrochloric or nitric acid at a 1% strength, obtained by diluting the usual concentrated acid about 100 times. Always add acid to water, take precautions, and consider using a less concentrated stock solution for safety. A diluted 1% bath is not hazardous. If mineral acids are a concern, dilute citric or acetic acid can also be effective to some extent. Keep the print in this bath for around half a minute to control contrast during development. Replace the bath after processing a few prints.

Subsequently, wash the print gently in running water for at least 20 minutes. Processing is complete when the yellow stain of the sensitizer is entirely removed

from unexposed areas. Check for stains by holding the print up to a bluish light or viewing it through a blue filter. If stains persist, additional washing is needed, and unlike traditional prints, there should be minimal loss of image substance during washing.

During wet processing, reversed shadow tones quickly regain their values, aided by nitric acid, and will fully recover during air drying. For immediate results, immerse the print in a 0.3% hydrogen peroxide bath for no more than half a minute before the final wash. Prepare the hydrogen peroxide solution by diluting 50 cc of the commonly available 6% solution to 1 liter of water. This step, while spectacular, has no impact on the final print densities.

After the washing process, delicately lift the print from the tray by one corner and let the water drain off the paper for 15 seconds. Hang the print on a clothesline or place it on a plastic window screen for air drying. Alternatively, you can dry the print on several paper towels laid on a table, ensuring it doesn't stick to the towels as it dries. During the drying process, the sensitizer will oxidize, turning into a deep Prussian Blue color. In case the image fades, store it in a dark place for 2-4 weeks, and it will re-oxidize, returning to a dark blue hue.

For optimal presentation, we recommend flattening your dried prints in a warm dry-mount press before mounting and matting them on archival, acid-free board.

8. Storage of the print

Avoid using buffered wrappings and mounts with a pH greater than 9 for Cyanotypes, as the alkali can destroy the Prussian blue pigment. While Cyanotypes may fade in bright daylight, they tend to recover in dark storage and regain full density after a few days. Exhibiting them under low light levels doesn't lead to measurable fading.