



## Wetplate Collodion Kit

Thank you for purchasing this Wetplate Collodion kit by Bostick & Sullivan. These mixing instructions are meant to be a basic guide to working with Bostick & Sullivan Wetplate kits and in no way should be considered a working guide to the wetplate process.

We recommend reading extensively on the process before attempting making images, and recommend joining the excellent online forum at [www.collodion.com](http://www.collodion.com).

### **Your kit contains:**

**150ml Salted Collodion Solution A** – A solution containing Cadmium Bromide and Ammonium Iodide in 95% Grain Alcohol.

**350ml Salted Collodion Solution B** – A solution of 60% Collodion and 40% Ether.

**250ml 10% Silver Nitrate Solution** – A standard 1.08 specific gravity solution of Silver Nitrate for sensitizing the collodion-coated plate.

**100ml Glacial Acetic Acid** - Used in many photographic applications, wetplate artists use Glacial Acetic acid to adjust the pH level of silver nitrate baths.

**1000ml Wetplate Developer** – The Bostick & Sullivan Wetplate Developer is a traditional Ferrous Sulfate formulation that can be used for both negative and positive development. Makes 2 liters of positive developer and 4 liters of negative developer.

**1000g Sodium Thiosulfate** – A safe, non-toxic fixer for all silver-based films, papers and photographic processes. A safe and sane alternative to deadly cyanide-based fixers.

**250ml Sandarac Varnish** – An aromatic mixture of Gum Sandarac, 95% Grain Alcohol and steam distilled Oil of Lavender. Used to create a beautifully glossy and protective lacquer finish on the emulsion side of a finished plate.

**Alcohol Lamp** – Warm your plates, solutions or varnishes over the low, even flame produced by this simple alcohol lamp. Fill with high-proof grain alcohol or isopropyl alcohol from the drugstore.

**Hydrometer** – Measure the specific gravity of your silver nitrate solution with this high quality glass hydrometer.

**pH Strips** – pH testing strips and chart for measuring the acidity and alkalinity of solutions

**Funnel** – A high quality 4.25" Paterson funnel

**(3x) Amber Bottles** – For storing mixed solutions.

**(1x) Plastic 1 liter Bottle**

**100ml Glass Graduated Cylinder**

## Step 1 – Preparing Salted Collodion

From Your Kit You Need:

***Salted Collodion Solution A***

***Salted Collodion Solution B***

***500ml Empty Amber Glass Bottle***

***100ml Glass Graduated Cylinder***

For Clean-Up:

***70% Isopropyl Alcohol – Available from your local drug or grocery store.***

Safety gear required:

***Safety glasses, latex or nitrile gloves, apron. Optional: gas mask respirator***

Mix Solutions A and B in the Following Ratios:

<u>Solution A</u>	<u>Solution B</u>
15ml	35ml
30ml	70ml
45ml	105ml
60ml	140ml
90ml	210ml
150ml	350ml

**Warning! These solutions contain Ether and Collodion. Avoid prolonged exposure to their fumes. Always work in a well ventilated area.**

### Mixing

**Step 1.** Pour *Salted Collodion Solution A* into a glass graduated cylinder until the desired amount is reached.

**Step 2.** Transfer *Solution A* from the graduated cylinder to a clean, dry amber glass bottle. Mark this bottle with today's date.

**Step 3.** Using the same graduate or beaker measure the appropriate quantity of *Salted Collodion Solution B* from the chart above.

**Step 4.** Pour *Solution B* into the dated amber bottle, allowing the thick solution to drip from the graduate until the Collodion beads on the lip and stops flowing. Cap the amber bottle tightly. It is normal for white clumps to appear or stringy pieces of Collodion to form in the bottle.

**Step 5.** Shake vigorously for 5 to 10 seconds, or until the solutions have mixed.

## **Aging**

Freshly mixed Salted Collodion from your Bostick & Sullivan kit will appear milky and may take from as little as 10 minutes to clear and as long as 2 hours, depending on temperature.

For optimum results, allow the Salted Collodion mixture to clear for a minimum of 2 hours before coating plates. Many artists report that this formula ripens and improves with time, usually 2 to 3 weeks for peak performance. We recommend testing or discarding after 6-8 weeks.

## **Clean up**

Fill used beakers and graduates with Isopropyl Alcohol. Stir, or cap and shake to help dissolve the thick collodion mixture clinging to the sides of the glass. Allow the alcohol solution to soak for 1 hour to help penetrate the Collodion. Dump, and rinse with Isopropyl Alcohol a second time. Wash with cold water. Any remaining Collodion will turn white and stringy and can be easily removed. You may discard the Isopropyl washing solution in your drain, while running plenty of water.

## **Storage**

Store mixed Salted Collodion solutions in the amber glass bottles supplied with your kit. Store in temperatures below 100F (38C). Keep bottles capped tightly, as the solutions will readily absorb water from the atmosphere.

## **Disposal**

Outdoors, away from buildings, children and animals, pour the unused salted Collodion solution in a shallow glass or ceramic dish for evaporation. Rinse the storage bottle with 50-100 ml of Isopropyl Alcohol, adding that solution to the dish. Allow the solution to evaporate for 24-48 hours. A brown or yellow crust of hard nitrocellulose will form in the dish. Wrap this crust in a plastic bag and discard with your regular trash.

The above method works well with smaller quantities of Collodion. Check with your local solid waste department or fire department for the proper disposal of large amounts of Collodion and Ether.

## **Preparing and Maintaining Silver Nitrate Bath**

The Silver Nitrate bath is arguably the single most important component of the Wetplate process, since a properly maintained Silver Nitrate bath will have a usable life of many years. It is important that the solution be systematically prepared for usage, and then constantly nursed so that its properties remain constant.

From Your Kit You Need:

***Silver Nitrate 10% Solution***

***Glacial Acetic Acid***

***Plastic Dropper***

***pH Testing Strips***

***Dated bottle containing cleared Salted Collodion***

***Funnel***

***Hydrometer***

***100ml Graduate***

You supply:

***One glass plate***

For Clean-Up:

***70% Isopropyl Alcohol – Available from your local drug or grocery store.***

Safety gear required:

***Safety glasses, latex or nitrile gloves, apron. Optional: gas mask respirator***

**Warning! Glacial Acetic Acid fumes are extremely irritating to the eyes and lungs. We recommend using a respirator gas mask when working with this chemical.**

## **Adjusting pH**

Before sensitizing plates in the Silver Nitrate 10% Solution, it is sometimes necessary to lower the pH to a range of 4 – 6. If you plan on printing negatives, a slightly acidic solution of pH 6 is desirable, while positive development works best with a more acidic pH 4-5.

**Step 1.** Open the bottle of Glacial Acetic Acid and draw up a full dropper of solution. Cap the bottle and set aside.

**Step 2.** Open the bottle of Silver Nitrate 10% Solution and insert a pH testing strip or electronic pH testing probe. The pH of the fresh solution should be around pH 5. (If you are using the testing strips that came with your kit, match the strip to the closest matching pH level on the chart provided).

**Step 3.** If the Silver Nitrate solution is pH 6 or above, add 1 drop of Glacial Acetic Acid to the bottle for every 250ml of Silver Nitrate 10%. Cap bottle and shake.

**Step 4.** Measure the pH using a fresh testing strip or electronic probe. The pH will drop considerably, and should be in the pH 4-5 range with just 1 or 2 drops of Glacial Acetic Acid.

## **Preparing a Plate with Salted Collodion**

Silver Iodide is a soluble form of Silver that must be present in the Silver Nitrate Bath before a properly sensitized plate can be made. The simplest way to introduce Silver Iodide into the Silver Nitrate Bath is to soak a Salted Collodion-Coated plate in the Silver Nitrate Bath for several hours. This plate will not be exposed after soaking, it is simply used to prepare the bath for the 'real' plates you will expose later.

**Step 1.** Pour the pH adjusted Silver Nitrate Solution into the tray or dunk tank you will be using to sensitize plate.

**Step 2.** Clean a 4x5" glass plate. Many formulas and techniques are prescribed for cleaning a glass plate. Pick your favorite one from the internet, and follow it exactly.

**Step 3.** Measure out 5ml of cleared Salted Collodion mixture from your dated bottle into a small, clean glass graduated cylinder.

**Step 4.** Place the supplied funnel into the top of dated Salted Collodion bottle to act as a catch container.

**Step 5.** While holding the glass plate in one hand, pour the entire 5ml of Salted Collodion along one edge of the glass plate, then tilt the plate in a circular motion to completely cover the plate in a thin layer of Collodion. If the temperature is below 60F, you may need to warm the glass plate over the Alcohol Lamp. Be careful not to heat the glass too quickly, or you may crack it or ignite the Collodion fumes.

**Step 6.** When the plate is covered, allow the excess Collodion to drain off one corner of the plate into the funnel.

**Step 7.** Place the coated plate into the Silver Nitrate Bath. Since this plate will not be exposed, it is ok to do this step in full light.

**Step 8.** After 5 minutes, pull the plate and inspect. The plate is a cloudy white color. This is the color you should expect to see everytime you pull a plate from the Silver Nitrate Bath, just before you put it in the holder and expose.

**Step 9.** Place the plate back in the Silver Nitrate Bath and allow it to soak for 6-8 hours, or until the plate is nearly translucent again. The Silver Nitrate Bath is now ready to sensitize glass and aluminum plates.

### **Measuring Specific Gravity**

Pour 50ml of the prepared Silver Nitrate Bath into a tall 100ml graduated cylinder. Lower the Hydrometer into the graduated cylinder. Add solution until the Hydrometer begins to float. Read the scale on the side of the hydrometer, noting the number where the Hydrometer passes through the surface of the solution. Record this number, and use it as a future reference as your “standard” solution of Silver Nitrate.

### **Clean Up**

Clean funnel, graduate and glass plate with plenty of Isopropyl Alcohol and water.

## **Maintaining Silver Nitrate Bath**

Periodically the Silver Nitrate bath must be tested and adjusted to maintain consistent properties. As you sensitize plates, Collodion, Ether, Alcohol and other contaminants will build up in the Silver Nitrate Bath. A simple procedure will help remove foreign substances and help keep a properly maintained Silver Nitrate bath working for years.

***Sunning Silver Nitrate*** - Pour the Silver Nitrate bath into a widemouth container, preferably a clear glass beaker or tray. Place in bright, direct sunlight for several hours. After a few hours, a layer of white, grey and black contaminants will settle to the bottom of the container. Filter this solution using a paper coffee filter placed in the funnel that comes with your kit.

***Testing Specific Gravity*** – After sunning and filtering the Silver Nitrate bath, measure the specific gravity using the hydrometer supplied with your kit. A “fresh” bath will be 1.08, while a good working bath can measure as low as 1.04.

If the Specific Gravity is lower than 1.04 you must add Silver Nitrate crystals to the bath. Slowly add Silver Nitrate crystals to the bath a few grams at a time, and mix to completely dissolve. Re-test the Specific Gravity each time, and stop when it reaches 1.06 to 1.07.

***Testing pH*** – Take a baseline reading of the pH using a pH strip or electronic meter. Follow the “Adjusting pH” instructions above to bring the Silver Nitrate bath to a range of pH 4-5 using Glacial Acetic Acid.

Your Silver Nitrate bath will provide years of use if you maintain it properly!

## **Developer**

The Wetplate Developer shipped with your Bostick & Sullivan kit uses the classic Ferrous Sulfate formula in a concentrated form.

For Positives:

Mix 1 part Wetplate Developer with 1 part water.

For Negatives:

Mix 1 part Wetplate Developer with 3 parts water.

These dilutions are a basic guideline, and you may find that you prefer a weaker or stronger developer.

## **Fixer**

Many fixers have been tried and used with Wetplate images. Bostick & Sullivan recommends a safe Sodium Thiosulfate fixer, which is virtually harmless to people and the environment. We recommend that beginners use a non-toxic fixer and then move towards others as they gain experience in the Wetplate process.

### **Standard Fixer Formula:**

200g Sodium Thiosulfate Crystals (about 200ml of dry crystals)

Add 100F Distilled Water to make 1000ml

Store in the clear 1 liter bottle included with your kit. Mark the bottle with today's date.

## **Sandarac Varnish**

Your kit includes an aromatic varnish made from the sap of the *Tetraclinis Articulata*. This varnish will leave a lustrous, glossy, and protective finish on your plates.

Pour a small amount of Sandarac Varnish into the 4oz bottle included with your kit, and place it in a hot water bath, until the temperature reaches 90-100F.

Place the funnel into the larger Sandarac Bottle as a catch container.

Heat your plate gently over the alcohol lamp until it is warm, but not too hot to handle with bare hands.

Pour approximately 10-12 ml of warm Sandarac Varnish onto the plate, and tilt the plate in a circular motion to completely cover the plate. Pour any excess off of one corner into the funnel. Dry the plate flat for 24 hours, or longer, in a dust free environment.

Clean up with Isopropyl Alcohol and water.