

PHOTOGRAPHERS' FORMULARY

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FORMULARY RESIDUAL SILVER TEST

Directions for mixing and using Formulary Residual Silver Test, kit size 125 ml

The residual Silver Test is used to determine if any silver ions remain in a print or filmstrip after fixing. When the test solution is applied to the photographic material, the sulfide ions in the solution react with any residual silver ions in the material forming a yellow stain indicating the fixing process is inadequate.

CHEMICAL SAFETY

All chemicals are dangerous and must be treated with respect. Please read the chemical warning on the package of sodium sulfide in this kit.

Sodium sulfide is now sodium sulfite. Sodium sulfite, a preservative used in almost all photographic developers, is considered to be a bland chemical. Sodium sulfide is a powerful photographic fogging agent and is used mainly in tonight baths. It is considered to be a dangerous chemical if it is used incorrectly.

Even though a very small amount of sodium sulfide is used in the mixing of the Residual Silver test, it should be treated with considerable care. Do not allow it to come into contact with acid or any acidic solutions, such as a stop bath or fixer solution.

Sodium Sulfide (as a solid or in solution) will react with acid to form hydrogen sulfide (H₂S) a foul smelling and poisonous gas.

If Contact should occur, wash the area first with cold water followed by soap and water.

The user assumes all risks upon accepting this chemical. IF FOR ANY REASON YOU DO NOT WISH TO ASSUME ALL RISKS, PLEASE RETURN THE CHEMICAL WITHIN 30 DAYS FOR A FULL REFUND.

Please check with local sewer and water authorities regarding the proper disposal of darkroom chemicals in your area.

MIXING THE SOLUTION

Stock Solution

You will need a brown bottle with a capacity of 125 ml and a 100 ml graduated cylinder for liquid measurements.

Chemical	Amount
Distilled water (COLD)	75ml
Sodium Sulfide	2 grams
Distilled water to make	125 ml

Place the Solid sodium sulfide in the storage container and add 75ml of distilled water. Stir the solution (or cap and shake the container) until all the solid has dissolved. Add cold water to bring the final volume up to 125 ml. Stir or cap and shake the final solution to ensure it is homogenous.

Working Solution

The stock solution is diluted 1 to 9 to make the working solution. Mix 1 drop of stock solution and 9 drops of water; or 1 ml of stock solution and 9 ml of water; or any other volumes in a 1 to 9 ratio to make the working solution.

Life of the Solutions

The stock solution has a useful life of about 3 months. The working solution has a life of less than 1-week. For best results mix the working solution at the start of each testing session.

Using the Test Solution

The test can be used on either negatives or prints; however, it works best on prints.

Wipe the print free of water and place a drop of the working test solution on a white portion of the print (margin or the center of an expendable print). Wait about 2 to 3 minutes remove the excess liquid by blotting it with a facial tissue. Any coloration beyond that of a just visible cream tint means that residual silver ions are present. In borderline cases, compare the questionable tint with that obtained by testing a thoroughly washed print fixed with two fresh fixing baths.

PHOTOGRAPHERS' FORMULARY SAFETY BULLETIN: SULFIDES

Sulfides of different kinds are used in photography, with sodium sulfide and polysulfide most often used in toning processes. We need to be aware of three particular areas of risk with sulfides. They may be dangerous as caustic solids or liquids, or as very poisonous gas, and the fumes will fog photosensitive emulsions.

A Solution of sulfide will dissolve flesh, and if allowed to contact the eye, blindness may result. A very small dry particle of sulfide will, upon reaching the eye, immediately form a concentrated solution with body fluids.

IF SULFIDES IN ANY FORM SHOULD CONTACT THE EYE IMMEDIATELY PLACE YOU EYE UNDER RUNNING WATER FOR 5 TO 10 MINUTES. Don't waste time calling for help or looking for eye washes. Administer first aid at once and then call a physician. Time is all-important.

It is always prudent to dissolve caustics in cold water, as considerable heat may be produced. It is as well, when making concentrated solutions, to dissolve the sulfide a bit at a time or to use ice water.

The fumes of sulfide solution are very noxious, but when a sulfide contacts an acid, the gas generated by the reaction is not only evil-smelling it is an exceptionally powerful poison. The gas, hydrogen sulfide is as active as hydrogen cyanide, and should be treated with equal respect. The only safe way to work with this gas is under near-ideal conditions, so it is essential that acids and sulfides not be allowed to contact each other in significant quantities. Dispose of spent solutions in a working drain with copious amounts of water. Never allow a sulfide to flow and acid into a drain, or vice versa. To do so will allow the poisonous gas to be generated in the sewer, and to be backed-up into the home. Promptly clean up any sulfide or acid spilled to avoid accidental contact.

We recommend the use of goggles when using sulfides or caustics of any sort. With reasonable precautions sulfides may be safely and profitably used, as they have been for many generations.

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