

PHOTOGRAPHERS' FORMULARY

FORMULARY EDWARD WESTON'S AMIDOL PAPER DEVELOPER

Directions for using Edward Weston's Amidol paper Developer: kit sizes, 1 liter (Catalog number 02-0010); 2 liter (Catalog number 02-0020); and 4 liter (Catalog number 02-0021).

Amidol, as a developer, produces rich, strong black tones, which are slightly cool. Prints developed in amidol have very good tone separation. Formulary Weston's Amidol, which is almost identical to Edward Weston's original formula, produces rich prints with a strong impact. The working solution can be diluted to obtain softer results without greatly affecting the color. The formula contains citric acid, which inhibits print stains by maintaining a low pH.

CHEMICAL SAFETY

All chemicals are dangerous and must be treated with respect. Please read the chemical warnings on each package.

Amidol is a poison and must be used with caution. It is probably absorbed through the skin. The use of tongs or disposable rubber gloves is recommended when working with amidol solutions.

Amidol stains: Staining is due to the air-oxidation of the Freebase of amidol that is present in neutral or alkaline solution. Soap, for example, is sufficiently alkaline to cause the amidol hydrochloride to be converted to the free base. In cleaning a darkroom after amidol use, first wash with water (amidol is very water-soluble) and then wash with a 2% solution of hydrochloric acid. The acid ensures that the amidol remains in the salt form. Once amidol has been oxidized and has stained, there is not much that can be done.

If an amidol solution should be spilled on the skin, wash the area first with water, then with a 2% solution of hydrochloric acid, and finally with soap and water.

The user assumes all risks upon accepting these chemicals. IF FOR ANY REASON YOU DO NOT WISH TO ASSUME ALL RISKS, PLEASE RETURN THE CHEMICALS FOR A FULL REFUND.

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

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MIXING WESTON'S AMIDOL

Use dilutions up to 1:10 (1 ml of working solution and 10 ml of water; 100 ml of working solution and 1000 ml of water, etc.). Diluted Weston's will require longer development times -- possibly 10 minutes. Be sure your safety light does not fog the paper.

Another control in development is the amount of potassium bromide that can be added to the developer. The optimum level can be found by the following procedure.

Mix the Stock Solution according to the instruction but omit the 10% potassium bromide solution. Add 5 ml of 10% potassium bromide per liter of working solution. Develop an unexposed strip of paper for 5 minutes with the safety light off. Should the paper fog, add another 5 ml portion of the potassium bromide solution and re-test the solution. When no fog appears, there is sufficient restrainer for the paper being used. Too much potassium bromide in the developer will decrease paper speed and increase the contrast.



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A stock solution without amidol is prepared first. Amidol is then mixed into this stock solution just prior to use because amidol deteriorates rapidly when it is in solution (useful life, 2-3 hours). Several packages of amidol are included in the kit. To make a working solution, one of these packages of amidol is added to a portion of the stock solution.

STOCK SOLUTION

You will need an appropriately sized storage container for the stock solution and two smaller mixing containers: one for the potassium bromide solution and the other for the citric acid solution. A graduated cylinder, or other volume-measuring device is also necessary.

Chemical	Kit Size		
	1-liter	2-liters	4-liters
Distilled water (52°C/125°F)	600 ml	1200 ml	2400 ml
Sodium sulfite	29 g	58 g	116 g
Potassium bromide, 10% solution	60ml	120ml	240ml
Citric acid, 5% solution	50ml	100ml	200ml
Cold water to make	1000ml	2000m	4000ml

Preparation of the 10% Potassium Bromide Solution.

Your kit will contain a packet of solid potassium bromide. To prepare the 10% solution add:

- 10 g potassium bromide to 100 ml of water for the 1-liter kit
- 20 g potassium bromide to 200 ml of water for the 2-liter kit
- 40 g potassium bromide to 400 ml of water for the 4-liter kit

Place the water (about 20°C/68°F) in a temporary container and add all the contents of the potassium bromide packet. Stir the solution to dissolve the solid. Be sure the solution is homogeneous before using it to prepare the stock solution. [To prepare an exact 10% concentration, place the potassium bromide in a graduated cylinder and add water to the proper mark. This latter procedure takes into account the volume of the potassium bromide.]

Preparation of the 5% Citric Acid Solution.

Your kit will contain a packet of solid citric acid. To prepare the 5% citric acid solution add:

- 5 g of citric acid to 100 ml of water for the 1-liter kit
- 10 g of citric acid to 200 ml of water for the 2-liter kit
- 20 g of citric acid to 400 ml of water for the 4-liter kit

Use the same procedure for mixing as was described for the preparation of the 10% potassium bromide solution.

Preparation of the Stock Solution

Place the warm water in the storage container and add the sodium sulfite. Stir the solution (or cap and shake the container) until the sulfite has dissolved. Measure out the correct volume of 10% potassium bromide solution and add it to the sulfite solution. Stir (or shake) to mix. Next, add the correct volume of the 5% citric acid solution. Again, stir (or shake) to mix. Finally add sufficient water to bring the total volume in the storage container up to 1000 ml (or 2000 ml or 4000 ml).

Working Solution

Your kit contains either two or four packages of amidol to allow you to use only a portion of the developer at one time. To prepare the working solution use:

Amount of Amidol	Volume of Stock Solution
4.5g	500 ml
9g	1000 ml

Add the contents of an amidol package to the proper volume of stock solution and stir the to obtain the working solution. Once the amidol has been mixed into solution, the life of the working solution is only 2-3 hours.

LIFE OF THE SOLUTIONS

The life of the stock solution without the amidol is in excess of six months. As has been mentioned, the life of the working solution is only 2-3 hours.

USING THE DEVELOPER

Use a development time of 3 minutes with undiluted Weston's Amidol Developer to obtain strong blacks with good contrast, As mentioned, the developer' can be diluted with water. Diluted Weston's Amidol is often used for soft or high-key prints. Diluted Weston's amidol allows a very high-contrast negative to be printed. Unlike other paper developers, diluted Weston's Amidol does not affect the print color.