

# PHOTOGRAPHERS' FORMULARY

## FORMULARY COPPER TONER

Formulary Copper Toner is a general-purpose toner that acts by deposition of copper metal. It is capable of producing a variety of colors ranging from warm brown to chalk red. The extract toner that is obtained depends upon the length of time the paper is immersed in the toning bath, and the type of paper used. Almost all papers can be used with this toning bath although fiber-based papers are best, resin coated papers work nicely also.

### CHEMICALS CONTAINED IN THIS KIT

CHEMICAL	AMOUNT
Copper Sulfate	6.2 g
Potassium Ferricyanide	5.2 g
Potassium Citrate	50 g

### CHEMICAL SAFETY

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

**POTASSIUM FERRICYANIDE:** In spite of the fact that this compound contains cyanide, it is not particularly toxic. The reason is that the cyanide groups are bound to the iron atom and are not free to act as a poison. The cyanide groups can be released as hydrogen cyanide as if the potassium ferricyanide is placed in a strong acid solution: however the copper toning process does not call for acid.

To dispose of excess potassium ferricyanide (solid or in solution) wash the material down the drain with excessive amounts of 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 WITHIN 30 DAYS FOR A FULL REFUND.

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

### MIXING THE STOCK SOLUTIONS

You will need two storage containers each with a capacity of one liter.

**CAUTION:** NEVER USE ANY METAL UTENSILS OR CONTAINERS IN MIXING, STORAGE OR USAGE OF ANY TONER.

## STOCK SOLUTION A

CHEMICAL	AMOUNT
Distilled Water (20°C/68°F)	750 ml
Copper Sulfate	6.2 g
Potassium Citrate	25 g
Distilled Water to Make	1000 ml

Place the water in the storage container or a mixing container and add the Copper Sulfate. Stir until the solid completely dissolves. Next add the potassium citrate and stir until the solid dissolves. Add water to bring the volume of the solution up to 1000 ml. Be sure to stir the final solution to ensure it is mixed thoroughly

## STOCK SOLUTION B

CHEMICAL	AMOUNT
Distilled Water (20°C/68°F)	750 ml
Potassium Ferricyanide	5.2g
Potassium Citrate	25 g
Distilled Water to Make	1000 ml

Mix the chemicals in the order given, in the same manner as directed for Stock Solution A.

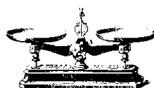
## USING THE TONER MIXING THE WORKING SOLUTION

Mix the working solution just prior to toning. To prepare the working solution., mix equal volumes of Stock Solutions A and B. Do not dilute the working solution. Discard the working solution after a working session.

## TONING THE PRINT

All toners work best if the print is fixed with a non-hardening fixer such as TF-4 Archival Rapid Fix (catalog number 03-0141). A hardening fixer decreases the permeability of the gelatin of the print thus decreasing the ability of the toning chemicals to reach the silver metal in the print.

To tone the print, immerse the fixed and washed print in the undiluted toning solution in a plastic tray. If you start with a dry print, be sure to presoak it in water. The longer the print is immersed in the toning solution, the more the tone will appear as a red hue. If the print is allowed to remain too long in the bath the whites will turn pink. When first using this toning solution, it is wise to determine the toning time with test strips. Rinse the toned print in running water for 20 minutes.



## PHOTOGRAPHERS' FORMULARY INC.

PO Box 950 • Condon MT 59826 • 406-754-2891 • FAX 406-754-2896  
E-MAIL [formulary@montana.com](mailto:formulary@montana.com)