Place the water in a mixing bowl and add the citric acid. Stir the mixture to dissolve the solid. Add sufficient water to bring the volume up to 1000 ml (or 2000 ml), stir to ensure it is homogenous, and then transfer the solution to a storage container.

LIFE OF THE SOLUTIONS

The shelf life of both the developer and the citric acid stop bath is in excess of six months provided that they are stored in full, tightly-capped bottles.

USING THE DEVELOPER

A typical developing sequence at 20°C/68°F is:

Develop:	10-12 minutes with slow films, or
	13-15 minutes with medium speed films, or
	18-20 minutes with fast films.
	[Return to the developing agent to its storage container. Increase the time of development by 10% after the first 2 rolls have been developed
Stop:	30 seconds using a citric acid stop bath
Fix:	2-4 minutes with Formulary TF-4 Rapid Fix (Cat. No. 03-0141)
Wash:	30 seconds
Clear:	1-2 minutes using Formulary Hypo Clear (Cat. No. 03-0165).
Wash:	5 minutes in running water.

PHOTOGRAPHERS' FORMULARY INC.

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PHOTOGRAPHERS' FORMULARY

FORMULARY MCM-100 FILM DEVELOPER

The MCM-100 formula was recommended to the Formulary by Robert A. Yajko. The developer contains two developing agents: p-phenylenediamine and catechol. p-Phenylenediamine produces negatives with extremely fine grain and catechol is incorporated to increase the film speed. This combination results in full film speed, very fine grain and superb tonal gradation.

A peculiarity of this combination of developing agents is that the emulsion side of the negative will have a high polish which will make it difficult to distinguish from the base side.

CHEMICALS CONTAINED IN THIS KIT

Your kit will contain the following chemicals:

	Kit Size	
Chemical	**1-liter**	**2-liter**
Potassium bromide	1 g	1 g
Citric Acid	15 g	30 g
Sodium sulfite	88 g	176 g
p-phenylenediamine	7 g	14 g
Catechol	9 g	18 g
Borax	2.3 g	4.6 g
Sodium phosphate, tribasic	3 g	6 g

CHEMICAL SAFETY

All chemicals are dangerous and must be treated with respect. Please read the warning on each package. This kit contains two chemicals that need special attention: p-phenylenediamine and catechol.

p-Phenylenediamine is toxic and has been reported to cause cancer in laboratory animals. Use extreme care in using this chemical. Wear rubber gloves when working with this compound or its solutions.

If spillage on the skin should occur, wash the area thoroughly with soap and water.

Clean the work area very carefully using soap and water or with a 1% solution of hydrochloric acid (about 3 ml of concentrated acid per 100 ml of water). The hydrochloric acid converts the p-phenylenediamine to a water soluble salt making the compound easier to remove.

Catechol (pyrocatechin), has a high vapor pressure and it is a phenol. The high vapor pressure means that solid catechol evaporates readily. When you open a bottle containing solid catechol, you can smell it. Always store solid catechol in a tightly-capped glass container. When mixing a solution containing catechol, work in a ventilated area. When catechol is in solution, its high vapor pressure is not a problem.

The fact that catechol is a phenol means that it is corrosive and can cause skin burns. If you should spill a solution of catechol, wash the area (or skin) with soap and water. Use tongs or rubber gloves whenever possible when working with this compound or its solutions.

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.

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

MIXING THE DEVELOPER

We recommend you wear a dust mask, splash goggles, rubber gloves and a rubber apron anytime you are mixing dry chemicals.

You will need two brown bottles each with a capacity of 1 liter (or 2 liters) and a mixing bowl. You will also need a small mixing bowl (such as a glass or cup) with a capacity greater than 100 ml to prepare the 1% potassium bromide solution needed for mixing the developer.

Chemical	Amount
Distilled water (20° C/68° F)	100 ml
Potassium bromide	1 g

Both the 1 - liter and 2 - liter kits contain a package which has 1.0 g of potassium bromide. Place the potassium bromide in a mixing container and add 100 ml of water. Stir the solution until the solid has dissolved. Be sure that the solution is homogenous before it is added to the developer solution.

Not all of the 1% solution of potassium bromide will be used in mixing the developer. The excess can be discarded or saved for use as a restrainer in another developer. The solution was mixed in the manner described to ensure that an accurate amount of the restrainer would be added to the developer.

Working Solution

	Kit Size	
Chemical	1-liter	2-liter
Water (125° F/52° C)	750 ml	1500 ml
Sodium sulfite	88 g	176 g
p-Phenylenediamine	7 g	14 g
Catechol	9 g	18 g
Borax	2.3 g	4.6 g
Sodium phosphate, tribasic	3 g	6 g
1% Potassium bromide solution	20 ml	40 ml
Water (68° F/20° C) to make	1000 ml	2000 ml

Due to the potential hazard of the chemicals used in this formula, it is prudent to wear rubber gloves (such as Playtex®-type gloves) and mix the solution in a sink so that all spilled chemicals and mixing utensils can be cleaned up easily.

Place the warm water in a mixing bowl, add the sodium sulfite, and stir until the solid has dissolved.

Transfer the p-phenylenediamine from its shipping bottle to the developer solution, then recap the shipping bottle and discard it in the trash. Stir the solution until dissolved. Next, add the catechol, followed by the borax and sodium phosphate. After each solid has been added, stir the solution to dissolve it. Be sure each solid has dissolved before the next is added.

After all the solids have been added, add 20 ml (or 40 ml) of the 1% potassium bromide solution. Finally, add sufficient water to bring the volume up to 1000 ml (2000 ml), stir the solution to ensure it is homogenous, and then transfer it to its storage container.

Citric Acid Stop Bath

	Kit Size	
Chemical	1 liter	2 liter
Water (20° C/68° F)	750 ml	1500 ml
Citric acid	15 g	30 g
Water to make	1000 ml	2000 ml