

# PHOTOGRAPHERS' FORMULARY

## FORMULARY FILM DEVELOPER 3

Makes 8-10 liters of working solution

Formulary Film Developer 3 is a soft working metol based developer that is similar in composition to Ilford ID-3. Developer 3 is capable of producing negatives with an excellent tonal range with sharpness and grain comparable to those obtained using D-76.

Developer 3 can be used as either a single bath developer or as a two-bath semi compensating developer. Directions for both types of usage are given below.

### CHEMICALS CONTAINED IN THIS KIT

Chemical	Amount
Metol	12 g
Sodium Sulfite	50 g
Sodium Carbonate, mono	87 g
Potassium Bromide	2 g
Borax	20 g

### CHEMICAL SAFETY:

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

Only one chemical used in mixing Developer 3 needs special attention. Some individuals become sensitized (develop allergic symptoms or rashes) when using metol. If this should happen, discontinue use and consult a physician.

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 the proper disposal of darkroom chemicals in your area.

### MIXING THE STOCK SOLUTIONS

You will need three 1-liter bottles to store the stock solutions. The storage container for stock solution A should be dark brown.

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

#### Stock Solution A

Chemical	Amount
Water (48° C/120° F)	750 ml
Metol	12 g
Sodium Sulfite	50 g
Cold water to make	1000 ml

Place the warm water in the storage container and add a pinch of sodium sulfite. (a small amount of sodium sulfite minimizes the initial oxidation of the metol. If more is added at this point, the metol will not dissolve.) Add the metol and stir the solution to dissolve the solid. It is important that all of the metol is dissolved before the sulfite is added. Add the sodium sulfite and again stir to dissolve the solid. Finally add cold water to bring the total volume up to 1000 ml. Stir the solution to ensure it is mixed thoroughly.

#### Stock Solution B

Chemical	Amount
Water (48° C/120° F)	750 ml
Sodium Carbonate, mono	87 g
Potassium Bromide	2 g
Water to make	1000 ml

Place the warm water in the storage container and add the sodium carbonate. Stir the solution until the solid goes into solution. Add the potassium bromide and stir again to dissolve the solid. Add cold water to bring the final volume up to 1000 ml, stirring the solution to ensure it is mixed thoroughly.

### Stock Solution C

(To be used only with the two-bath development procedure)

Chemical	Amount
Water (20° C/68° F)	750 ml
Borax	20 g
Water to make	1000 ml

Place the water in the storage container, add the borax and stir the solution to dissolve the solid. Add cold water to bring the final volume up to 1000 ml, stirring the solution to ensure it is mixed thoroughly.

### LIFE OF THE SOLUTIONS

Stock solution A will slowly deteriorate and turn brown over a period of 6 months due to air oxidation. Be sure to keep the container of solution A tightly capped. Solutions B and C have a shelf life of one year. The working solution is a one shot developer and is discarded after use.

### USING THE DEVELOPER

A standard dilution and a softer working dilution can be obtained from the stock solutions depending on the dilution you use.

#### Standard Dilution (1:1:6)

Solution	Part	Volume	Volume	Volume
Stock solution A	1	30 ml	60 ml	125 ml
Stock solution B	1	30 ml	60 ml	125 ml
Water (20° C/68° F)	6	180 ml	360 ml	750 ml
Total volume of working solution:		240 ml	480 ml	1000 ml

#### Soft-Working Dilution (1:1:8)

Solution	Part	Volume	Volume	Volume
Stock solution A	1	30 ml	50 ml	100 ml
Stock solution B	1	30 ml	50 ml	100 ml
Water (20° C/68° F)	8	240 ml	400 ml	800 ml
Total volume of working solution:		300 ml	500 ml	1000 ml

### Single-Bath Procedure

The times given below are suggested starting points. You should develop a test strip of film to determine the correct developing time for your material and technique.

We recommend 6 minutes with slower films (Plus X, FP-4) or 8 minutes with T-MAX or fast films (Tri X, HP-4), using your normal development procedure of develop, stop, fix, wash, clear, wash.

### Two-Bath Procedure

If your film contains extremely high contrast scenes, Developer 3 can be used as a semi-compensating developer to obtain printable negatives. With a semi-compensating developer, development is started in the first bath and completed in the second bath. (With a completely compensating developer, development takes place only in the second bath). By using a two-bath system, development is held back in the highlights but continues in the shadows. The result is a reduction in contrast.

Develop the film for 4-5 minutes in a working solution of Developer 3, with agitation for five seconds every 30 seconds, the WITHOUT RINSING AND WITHOUT FURTHER AGITATION, transfer the film to a bath of Stock Solution C (a 2% solution of borax) and allow to stand for 3 minutes. Stop, fix, and wash the film using your normal development procedure.