

PHOTOGRAPHERS' FORMULARY

FORMULARY SUBSTITUTE FOR D-19

This is a published formula originally designed for use with x-ray materials and is now recognized as an excellent developer for aero films and plates when high contrast is desired. D-19 Film Developer is a high-contrast developer used primarily for scientific applications with spectroscopic films and plates, high resolution plates and films like Tech Pan and high speed Infrared.

D-19 provides higher than normal contrast and speed, higher than average graininess, high capacity, clean working and fast acting.

CHEMICAL SAFETY

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

METOL: Some individuals become sensitized (develop allergic symptoms or rashes) when using metol. If this should occur, discontinue use AND consult a physician.

HYDROQUINONE: Is considered by the EPA to be hazardous and a skin sensitizer.

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.

MIXING THE WORKING SOLUTION:

You will need a one-liter plastic storage container and a larger glass or plastic mixing container.

| CHEMICALS | AMOUNTS | |
|--------------------------------|------------|-----------|
| Distilled Water (48C/125F) | 500 ml | 2500 ml |
| Metol | 2 grams | 8 grams |
| Sodium Sulfite | 90 grams | 360 grams |
| Hydroquinone | 8 grams | 32 grams |
| Sodium Carbonate (monohydrate) | 52.5 grams | 210 grams |
| Potassium Bromide | 5 grams | 20 grams |
| Cold water to make | 1 liter | 4000 ml |

Dissolve all chemicals in the order given. Place the warm water in the mixing container and add a pinch of the sodium sulfite. (a small amount of sodium sulfite inhibits 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 remaining sulfite is added. Add the sodium sulfite and stir to dissolve the solid. Add the rest of the chemicals in order, stirring to dissolve each one before adding the next chemical. Finally, add cold water to bring the total volume up to 1000 ml. or 4000 ml (depending on the kit you have) stir the solution thoroughly.

Metol and Hydroquinone, in these proportions, produce very high contrast.

USING THE DEVELOPER:

This developer is recommended for use at from 65 F (18 C) to 70 F (21 C) best results will be obtained within this range. However, acceptable results will be obtained at somewhat higher and lower temperatures.

These are recommended starting times based on undiluted developer. Determine correct time and temperature using test strips.

- 60 F for 12 minutes 65 F for 10 minutes 68 F for 9 minutes
- 70 F for 8 1/2 minutes 75 F for 7 minutes

Stop, fix and wash in the usual manner.