

An excellent- although highly inconvenient method of giving reduced agitation for sheet film in a tray- is mentioned in Ansel Adam's "The Negative", page 244.

All agitation methods give excellent results provided they are used consistently. It is strongly recommended that "B" or "C" be used for most work.

TYPICAL PROCESSING TIME

Use a temperature of 20° C/68° F for development and no less than 500 ml of working solution for one roll of film. A two minute pre-soak is optional. Discard the developer after use.

Develop:	Depends upon the agitation procedure.
Water rinse:	60 seconds. (a water rinse instead of a stop bath is imperative; otherwise the film may reticulate)
Fix:	1 to 2 minutes in a rapid fix or 3-4 minutes in a sodium thiosulfate fixer.

In general, use twice the clearing time of a processed film.

Wash:	2 minutes in running water at 20° C/68° F
Hypo Clear:	3 minutes in a hypo-clear using an intermittent agitation.
Final Wash:	5-15 minutes. The longer time improves the archival stability.
Wetting agent:	30-60 seconds in a diluted wetting agent.

For questions concerning this product, please call us at 406-754-2891.

PHOTOGRAPHERS' FORMULARY INC.

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CATALOG NOS. 01-0065
01-0066
01-0067

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TD-3 TECHNICAL PAN FILM DEVELOPER May be used on 35mm, 21/4, or 4x5 film

01-0065	250 ml concentrate = approx. 15-20 rolls of 35mm film
01-0066	1 liter concentrate = approx. 60-80 rolls of 35mm film
01-0067	2 liter concentrate = approx. 125-150 rolls of 35mm film

TD-3, an original formulation by William Tropp- is a unique- non -phenidone film developer offered exclusively by Photographers' Formulary. The developer, when used to process Kodak Tech-Pan or similar film, yields negatives with unique clarity, high accutance, and superlative low contrast gradation. Deep shadow definition is normal yet there is clarity in the highlights and exceptional depth in the middle tones. With slight over-exposure- you can gain a degree of shadow and luminosity that is unavailable with any other film developer combination.

With TD-3 development there is a true increase in film speed of more than one stop when compared with Phenidone development. This means you can use Tech-Pan at an ASA between 32 and 64. You will be able to hand hold your camera while shooting with Tech-Pan. (Kodak rates Phenidone developers for Tech-Pan at about 25 ASA.)

The combination of TD-3 and Tech-Pan film is truly a giant step forward in modern 35 mm photography. You can enlarge negatives 15 to 25 times without grain or loss of sharpness. Tack-sharp 8x10 or 16x20 prints can be made without special equipment.

Reports from our customers are that the results using TD-3 for the 120 film size is just as sharp or better than the 35 mm.

CONTENTS OF YOUR KIT

Your kit contains two bottles labeled "TD-3 concentrate to make Stock Solution A", and "TD-3 concentrate to make Stock Solution B". These two solutions will be diluted to make stock solutions. The working solution will be mixed just prior to use.

CHEMICAL SAFETY

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

Stock solution "A" contains a corrosive. Should this solution be spilled, wash the area immediately and thoroughly with copious amounts of water followed by soap and water.

Stock solution "B" contains a mild alkali. Should this solution be spilled, clean the area with water, then 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 kit to us within 30 days for a full refund.

LIFE OF THE STOCK SOLUTION

Stock solution "A" is stable for a year if stored in a completely filled bottle. Special care should be taken to keep the Stock solution "A" bottle tightly capped. If left uncapped, the concentration of the solution will change.

Stock solution "B" will keep indefinitely provided it is stored in a full and tightly closed bottle. Should a very long storage time (six months or more) be anticipated, then the solution should be transferred to a plastic bottle for storage.

MIXING THE STOCK SOLUTION

DISTILLED WATER IS HIGHLY RECOMMENDED. Your kit contains concentrated solutions which must be diluted to make the stock solution. The working solution is prepared by mixing and diluting the stock solutions; however, the working solution is not stable after it is mixed. As a consequence, mix only enough working solution to fill your processing tank.

With sheet film, the capacity of TD-3 is 2 4x5 sheets per liter of working solution using the standard dilution.

APPEARANCE OF THE FINAL NEGATIVE

Negatives obtained from TD-3 development have a greenish-brown appearance.

This is the normal permanent color and is the result of the unique combination of TD-3. These negatives will print with slightly higher contrast than their appearance suggests.

PROCESSING PROCEDURE

AGITATION

Since TD-3 is a very dilute developer, the agitation technique used during development is very important because it determines how much fresh developer is allowed to reach the film. Both the development time and the appearance of the resulting negative depend on the agitation technique.

Descriptions of agitation techniques for developing roll film and sheet film follow. Any of the roll film techniques may be used. However, only one technique can be used at a time -- **DO NOT CHANGE TECHNIQUE IN THE MIDDLE OF A DEVELOPING RUN.**

Agitation Procedure A: Use 4 slow inversions of the developing tank each minute. With this technique a 11-15 minute developing time is standard.

Agitation Procedure B: Use ten slow inversions of the processing tank (a total of 20 seconds of agitation) every third minute. With this technique, use 20-22 minutes of development time.

Agitation Procedure C: Use 4 slow inversions and ten quick twists of the tank twist stick every third minute. With this procedure- as with Procedure B- use 20-24 minutes of development time.

Agitation for sheet film: Either continuous or intermittent agitation may be used - although best results will probably be obtained with intermittent agitation on the third minute. If you use continuous agitation- reduce the development time. You will have to run a test strip to calibrate your personal method of agitation. For those who wish to process 4x5 film in a daylight tank- the Jobo system is recommended.

In cold weather a solid may form in the bottle containing the concentrate for Stock Solution "A". If this should occur, before mixing the working solution, warm Solution "A" in a warm water bath to about 113° F and use occasional shaking to re-dissolve the solid.

To mix the stock solution, you will need two dark brown bottles (either glass or plastic), each with a capacity of 1 liter or more depending on the size of your kit. A graduated cylinder or other measuring device will also be needed.

In some areas the normal water supply will not work well with this developer. To be on the safe side, **USE DISTILLED WATER** for mixing both the stock and working solutions.

STOCK SOLUTION "A":

Take the 125 ml bottle labeled "Concentrate for Stock Solution A" to the storage container. Measure out 875 ml of water. Add together, mix well. This will make one liter of Stock Solution "A".

STOCK SOLUTION "B":

Use the same procedure as described for Solution "A" except that the bottle labeled "Concentrate for Stock Solution "B" is used.

STANDARD WORKING SOLUTION

Probably most of your Technical Pan film can be developed using the standard dilution of your TD-3 developer. This dilution will give full film speed and normal contrast. Other dilutions for unusually exposed film can also be mixed (see Alternative Dilutions).

VOLUME OF WORKING SOLUTION DESIRED

CHEMICAL	500 ml working solution	1000 ml working solution
Stock solution A	50 ml	100 ml
Stock solution B	50 ml	100 ml
Distilled Water	400 ml	800 ml

A simple procedure for mixing the working solution is to place about 3/4 of the final volume of water in a graduated cylinder, add the proper volumes of the Stock solutions, then fill the cylinder to the correct volume mark with distilled water.

Technical Pan film exposed to a moderate contrast 8-stop scene and then developed for 21 minutes using the standard dilutions and Agitation Procedure B (see pg 5) yields negatives with a density range of about 1.3. These negatives print best using a grade 1 paper with a condenser enlarger, or a grade 2 paper with a diffusion enlarger. (With traditional 35mm technique, the same scene would yield negatives with a density range between 0.1 and 1.1 and would require grade 2 or 3 paper for printing).

An easier-to-print negative of low density range will be obtained by developing for only 13-15 minutes with Agitation Procedure A. However, photographers who wish to take advantage of every portion of the print curve, and who wish to achieve maximum total separation, may prefer a negative of higher density range.

ALTERNATIVE DILUTIONS

SOL. "A"	SOL. "B"	WATER	USE AND CHARACTERISTICS
150 ML	150 ML	700 ML	Gives high contrast negatives. Use when the subject is very flat.
120 ML	90 ML	790 ML	For slightly higher contrast than normal
100 ML	100 ML	800 ML	The standard TD-3 dilution for normal contrast.
70 ML	150 ML	780 ML	Compensating developer with loss of film speed.
60 ML	150 ML	790 ML	*Gives very soft negatives. Considerable loss of film speed.

* This dilution of TD-3 requires a 30% extension of the standard developing time. With agitation procedure "A", use 14-20 minutes of development; with agitation procedures "B" and "C", use 23-29 minutes.

CAPACITY

TD-3 is a very dilute developer. To insure that sufficient developing agent is present in the tank, use a minimum of 500 ml of working solution per roll of Technical Pan film. If two rolls of film are placed in the tank, then use 1 liter of working solution.

With this dilution requirement, your kit contains enough stock solution to process 15-20 rolls of film, at the standard dilution. The larger size kits will do about 40 and 80 rolls of film.