KODAK PROFESSIONAL T-MAX 100 Direct Positive Film Developing Outfit

The KODAK PROFESSIONAL T-MAX 100 Direct Positive Film Developing Outfit is designed to produce positive black-and-white slides from KODAK PROFESSIONAL T-MAX 100 Film and KODAK PROFESSIONAL Technical Pan Film.

Use this kit with T-MAX 100 Film to produce high-quality slides from camera-original exposures; continuous-tone photographs, drawings, and artwork; and radiographs. You can also use the kit with T-MAX 100 Film to produce copy negatives from black-and-white or color negatives, duplicate black-and-white slides, or black-and-white slides from color slides.

Use this kit with Technical Pan Film to produce high-quality slides of computer-generated graphs and line art, or to create high-contrast title slides.

FILM EXPOSURE

When you plan to process T-MAX 100 or Technical Pan Films with the Direct Positive Film Developing Outfit, you'll need to modify the film exposure.

Use the speeds in the following table with cameras or meters marked for ISO, ASA, or DIN speeds or exposure indexes. Make incident-light exposure-meter readings at the subject position or plane. These exposure indexes are starting-point recommendations.

KODAK PROFESSIONAL Film	Application	Contrast	Speed Rating
T-MAX 100	Slides from continuous-tone photographs, artwork, or camera-original exposures; copy negatives; and duplicate black-and-white slides	Normal	EI 50/18°
		Lower	EI 25 to 40/ 15 to 17°*
		Higher	EI 64 to 100/ 19 to 21°*
Technical Pan	Slides from computer-generated graphs, line art, and drawings; and high-contrast title slides	High	EI 64/19°

* Use these exposure indexes with a modified first developer to produce lower or higher contrast (see "Adjusting Contrast").

FOR YOUR SAFETY

Handle all chemicals, including photochemicals, very carefully. Wear protective gloves to prevent skin contact. For safe-handling information for Kodak chemicals, see the product label, the product instructions, the Material Safety Data Sheet, and KODAK Publication No. J-4S, *The Prevention of Contact Dermatitis in Photographic Work.*

PROCESSING SOLUTIONS

This outfit contains liquid concentrates to make the following volumes of working solution for each of these chemicals:

First Developer	946 mL (1 quart)
Bleach	3.78 L (1 gallon)
Clearing Bath	946 mL (1 quart)
Redeveloper	946 mL (1 quart)

Note: A fixer is not included in this outfit. We recommend using a hardening fixer such as KODAK Rapid Fixer (prepared with Parts A and B), KODAK POLYMAX T Fixer, KODAFIX Solution, or KODAK UNIFIX. Do not use a fixer that does not contain a hardener.

Capacity

You can process up to 12 rolls of 135-36 film per 946 mL (1-quart) outfit. To process the maximum number of rolls, you must extend the processing time of the first developer and redeveloper to compensate for the number of rolls previously processed (see "Processing" for adjusted times).

The capacity of the individual solutions will also depend on solution carry-over and aeration. Carry-over and aeration will vary with different methods of processing.

Storage

Store working-strength solutions in full, tightly closed glass or plastic bottles in a cool place (22°C [72°F] or lower). You can store unused solutions (except for the bleach) for 8 to 10 weeks; partially used solutions for 6 to 8 weeks. Do not store bleach in metal containers. Avoid prolonged contact of bleach with metal or hard-rubber processing equipment.

Use bleach once and then discard it for most applications (some exceptions are described under "Processing"). For best results, mix the bleach just before use.

Mixing

See the instructions packaged with the outfit.

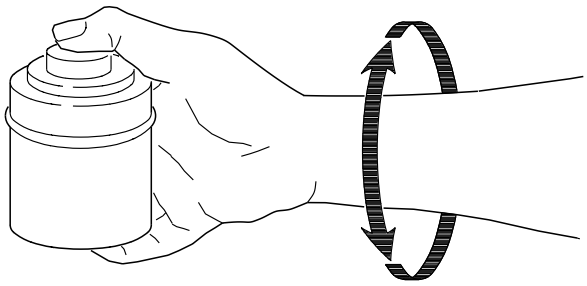
DARKROOM RECOMMENDATIONS

Process film in total darkness until the rinse after the bleach step. For the remaining steps, you can use a KODAK OA Safelight Filter (greenish yellow) with a 15-watt bulb in a suitable safelight lamp. Do not examine the film under white light until fixing is complete.

PROCESSING

Small-Tank Processing

For optimum uniformity with a small single- or double-reel tank, drop the loaded film reel into the first developer and attach the top to the tank. Firmly tap the tank on top of the work surface to dislodge any air bubbles. Provide initial agitation of 5 to 7 inversion cycles in 5 seconds (extend your arm and vigorously twist your wrist 180 degrees).



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Then repeat this agitation procedure at 30-second intervals for the rest of the development time.

Use this same agitation technique (initial agitation of 5 to 7 inversion cycles in 5 seconds, and then repeating the procedure at 30-second intervals for the rest of the processing time) for all solutions *except the bleach.*

Bleach Agitation

The agitation method is critical to satisfactory bleaching. Agitation should be almost continuous to allow for more rapid removal of bleach by-products from the film surface than can be achieved with normal agitation.

Bleach-agitation procedure for small tanks:

1. For invertible plastic tanks that have a funnel in the lid, premeasure the normal amount of bleach. For stainless-steel tanks and invertible tanks that do not have a funnel in the lid, premeasure an amount of bleach that is about 80 percent of your tank's capacity.
2. Agitate by inverting the tank and returning it to the upright position about 30 times each minute, rotating it slightly with each inversion.

Note: Allow the air in the tank to bubble up to the bottom of the tank while it is inverted, and back to the top when you turn the tank upright. This technique helps to provide sufficient agitation.The unusually large amount of air provides more solution movement than is usually provided in stainless-steel tanks or tanks that do not have a funnel in the lid. In tanks that have a funnel in the lid, the air in the funnel usually allows sufficient agitation *without* decreasing the amount of solution in the tank.

Alternate bleach-agitation procedure (requires total darkness):

1. Before you begin processing your film in a small, lighttight tank, set aside an additional open tank that is taller than the one required for processing the number of rolls you have. Add enough bleach to this tank to cover the number of rolls you are processing.
2. In total darkness, remove the film reels at the end of the first rinse. Place them on a "T-bar" rod and lower them into the bleach solution in the taller tank. Agitate the film according to the bleach-agitation procedure given under "Large-Tank Processing."
3. After you complete the bleach step, return the film reels to your original lighttight tank and resume processing with the next rinse step.

Small-Tank Processing Cycle

Processing Step	Temperature	Time* (min: sec)	Temperature	Time* (min: sec)
First Developer	20°C (68°F)	8:00†	24°C (75°F)	5:00†
Rinse‡	19 to 21°C (66 to 70°F)	2:00	23 to 25°C (73 to 77°F)	2:00
Bleach§				
Rinse‡				
Clearing Bath				
Redeveloper	20°C (68°F)	6:00†	24°C (75°F)	4:00†
Rinse	19 to 21°C (66 to 70°F)	0:30	23 to 25°C (73 to 77°F)	0:30
Fix		5:00		5:00
Wash¶	18 to 24°C (65 to 75°F)	20:00	18 to 25°C (65 to 77°F)	20:00
KODAK PHOTO-FLO Solution	19 to 21°C (66 to 70°F)	0:30	23 to 25°C (73 to 77°F)	0:30
Dry	No higher than 60°C (140°F)			

* Carefully control the first-developer, bleach, and redeveloper times. The times for the other steps are minimum times; you can extend them by a few minutes without significantly changing the results.

† These times are for fresh solutions. For partially used solutions or for other temperatures, use the adjusted first-developer and redeveloper times in the following table.

‡ Provide at least two complete changes of water. Drain the tank completely after each change.

§ Discard the bleach after one use.

¶ You can use KODAK Hypo Clearing Agent to save time and conserve water.

Adjusted Development Times—Small-Tank Processing

To process the maximum number of rolls with this outfit, be sure to keep a record of the number of rolls you process. Then use the adjusted times in the table below for the first developer and the redeveloper in subsequent processes.

For example, if you have already processed three rolls of film in 946 mL (1 quart) of solution, find the number 3 in the first column in the table. Then read across the table to the temperature that you are using to determine the adjusted processing time for your next batch. If you are processing at 21°C (70°F), you would use 8 minutes for the first developer and 6 minutes 30 seconds for the redeveloper.

To use processing temperatures other than 20°C (68°F) or 24°C (75°F), see the temperatures and times in the table for the first developer and the redeveloper.

Number of 135-36 or 120 Rolls per 946 mL (Quart) Processed Previously	Adjusted Times for Reusing First Developer and Redeveloper or Processing at Other Temperatures (Min:Sec)				
	20°C (68°F)	21°C (70°F)	22°C (72°F)	23°C (74°F)	24°F (75°F)
First Developer					
0	8:00	7:00	6:30	5:30	5:00
1	8:30	7:30	6:30	6:00	5:30
2	8:30	7:30	7:00	6:00	5:30
3	9:00	8:00	7:00	6:00	5:30
4	9:00	8:00	7:00	6:30	6:00
5	9:30	8:30	7:30	6:30	6:00
6	9:30	8:30	7:30	6:30	6:00
7	10:00	9:00	8:00	7:00	6:30
8	10:00	9:00	8:00	7:00	6:30
9	10:30	9:30	8:30	7:30	6:30
10	10:30	9:30	8:30	7:30	7:00
11	11:00	10:00	8:30	7:30	7:00
Redeveloper					
0	6:00	5:30	5:00	4:30	4:00
1	6:30	6:00	5:00	4:30	4:30
2	7:00	6:00	5:30	5:00	4:30
3	7:00	6:30	6:00	5:00	5:00
4	7:30	7:00	6:00	5:30	5:00
5	8:00	7:00	6:30	5:30	5:30
6	8:30	7:30	7:00	6:00	5:30
7	8:30	8:00	7:00	6:00	6:00
8	9:00	8:00	7:30	6:30	6:00
9	9:30	8:30	7:30	7:00	6:30
10	10:00	9:00	8:00	7:00	6:30
11	10:30	9:30	8:30	7:30	7:00

Large-Tank Processing

Continuously agitate the film in all solutions except the bleach for the first 15 to 30 seconds of the first minute. After the first minute, agitate for 10 seconds at 1-minute intervals.

Bleach Agitation

The agitation method used during bleaching is critical in large-tank processing. Agitation should be nearly continuous to provide faster removal of exhausted bleach from the film surface.

1. Rapidly immerse the film rack into the bleach.
2. Smoothly and rapidly lift the rack back out of the bleach until it just clears the solution.
3. Immediately let the rack sink back down to the bottom of the tank, and then lift it again. Repeat this procedure until 10 to 15 seconds before the end of the bleach time.
4. Drain the film rack for 15 seconds and begin the next processing step.

Large-Tank Processing Cycle

Processing Step	Temperature	Time* (min: sec)	Temperature	Time* (min: sec)
First Developer	20°C (68°F)	9:00†	24°C (75°F)	6:00†
First Rinse	19 to 21°C (66 to 70°F)	1:00	23 to 25°C (73 to 77°F)	1:00
Second Rinse		1:00		
First Bleach‡		1:00		
Second Bleach‡		1:00		
Third Rinse		1:00		
Acid Clearing Bath§ (if needed)		1:00		
Fourth Rinse		1:00		
Clearing Bath		2:00		2:00
Redeveloper	20°C (68°F)	7:00†	24°C (75°F)	4:30
Fifth Rinse	19 to 21°C (66 to 70°F)	0:30	23 to 25°C (73 to 77°F)	0:30
Fix		5:00		5:00
Wash¶	18 to 24°C (65 to 75°F)	20:00	18 to 25°C (65 to 77°F)	20:00
KODAK PHOTO-FLO Solution	19 to 21°C (66 to 70°F)	0:30	23 to 25°C (73 to 77°F)	0:30
Dry	No higher than 60°C (140°F)			

* Carefully control the first-developer, bleach, and redeveloper times. The times for the other steps are minimum times; you can extend them by a few minutes without significantly changing the results.

† These times are for fresh solutions. For partially used solutions or for other temperatures, use the adjusted first-developer and redeveloper times in the following table.

‡ See “Bleach Options.” You can use a single bleach in some cases.

§ See “Bleach Options.” You may need an acid clearing bath if you use a replenished-bleach procedure.

¶ You can use KODAK Hypo Clearing Agent to save time and conserve water.

Bleach Option

It is not always possible to use processing solutions to their full capacity with every large-tank processing cycle. Because the bleach has the shortest storage life of the solutions in this outfit, you must either run each process near full capacity or replenish the bleach to use the other processing solutions at close to their full capacity.

Note: For the bleach to remain effective, you must process enough film to replace the entire bleach-tank volume with replenisher solution within a two-week period. For example, you would have to process at least 132 rolls in a 13.2 L (3.5-gallon) sink-line tank.

Bleach by-products will precipitate in the bleach when you use a replenished bleach. Bits of precipitate, if carried over into the redeveloper, can cause light spots (undeveloped areas) in processed slides. Use an acid clearing bath, such as Clearing Bath CB-6 or a 1.5-percent solution of sodium bisulfite (anhydrous), after the rinse that follows the replenished bleach. This bath will dissolve any precipitate that adheres to the film. Use the formula below to prepare Clearing Bath CB-6.

Clearing Bath CB-6

Water	800 mL
Sodium Bisulfite (Anhydrous)	15 g
Sodium Hexametaphosphate or CALGON	0.5 g
Water to make	1.0 L

To prepare an acid clearing bath from more common materials, mix as follows:

Acid Clearing Bath

KODAK Hypo Clearing Agent (working strength)	985 mL
KODAK Indicator Stop Bath (concentrate)	15 mL
To make	1.0 L

Replenished two-bleach process:

1. For the first process, fill both bleach tanks with bleach working solution.
2. Before each subsequent process, remove and discard 100 mL (3.4 fl oz) of bleach from the first bleach tank for every roll processed in the preceding batch.
3. Remove the same volume of bleach from the second bleach tank and add it to the first bleach tank.
4. Add the same volume of bleach replenisher solution to the second bleach tank. To make bleach replenisher, start with 118 mL (4 fl oz) of water. Add 89 mL (3 fl oz) of bleach Part A concentrate. Add 89 mL (3 fl oz) of bleach Part B concentrate. Stir until the solution is uniform.

Single-bleach process:

You can use fresh bleach with a 2-minute bleach time for each process instead of two bleach steps. This option will not yield the full capacity of the processing outfit, but it allows the bleach to be mixed fresh for each process, gives consistent results, and simplifies the procedure.

Rinse Options

If the number of tanks or volume of water used is a problem, you can use one of the following options:

To eliminate *one* processing tank:

1. For the third rinse, use the same tank you used for the first rinse.
2. After each process:
   a. Dump the water from the first rinse tank.
   b. Pour the water from the second into the first rinse tank.
   c. Pour fresh water into the second rinse tank.
3. After each process (or daily):
   Either—
   a. Dump the water from the fourth rinse tank.
   b. Pour the water from the fifth rinse tank into the fourth rinse tank. Pour fresh water into the fifth rinse tank.

   Or—
   c. Dump the water from the fourth and fifth rinse tanks and refill them with fresh water.

To eliminate *two* processing tanks:

1. For the fourth rinse, use the same tank you used for the first rinse.
2. For the third rinse, use the same tank you used for the second rinse.
3. After each process, dump the water from the first and second rinse tanks and refill them with fresh water.

For minimum water use:

After every 8 rolls per 946 mL (1 quart) or 28 rolls per 13.2 L (3.5 gallons):

1. Dump the water from the third rinse.
2. Pour the water from the fourth rinse tank into the third rinse tank.
3. Pour the water from the fifth rinse tank into the fourth rinse tank.
4. Pour the water from the first rinse tank into the fifth rinse tank.
5. Pour the water from the second rinse tank into the first rinse tank.
6. Pour fresh water into the second rinse tank.

Adjusted Development Times—Large-Tank Processing

To process the maximum number of rolls with this outfit, use the adjusted times in the following table for the first developer and the redeveloper. Keep a record of the number of rolls you process. For example, if you have already processed 6 rolls of film in 1.9 litres (½ gallon) of solution, find the number 3 in the first column in the table (6 rolls per ½ gallon = 3 rolls per quart). Then read across the table to the temperature that you are using to determine the adjusted processing time for your next batch (e.g., at 70°F, use 9 minutes for the first developer and 7 minutes 30 seconds for the redeveloper).

To use processing temperatures other than 20°C (68°F) or 24°C (75°F), see the temperatures and times in the following table for the first developer and the redeveloper.

Note: If you are processing sheet film, one 8 x 10-inch sheet is equivalent to one 135-36 or 120 roll.

Number of 135-36 or 120 Rolls per 946 mL (Quart) Processed Previously	Adjusted Times for Reusing First Developer and Redeveloper or Processing at Other Temperatures (Min:Sec)				
	20°C (68°F)	21°C (70°F)	22°C (72°F)	23°C (74°F)	24°F (75°F)
First Developer					
0	9:00	8:00	7:00	6:30	6:00
1	9:30	8:30	7:30	6:30	6:00
2	9:30	8:30	7:30	6:30	6:00
3	10:00	9:00	8:00	7:00	6:30
4	10:00	9:00	8:00	7:00	6:30
5	10:30	9:30	8:30	7:30	7:00
6	11:00	9:30	8:30	7:30	7:00
7	11:00	10:00	9:00	8:00	7:00
8	11:30	10:00	9:00	8:00	7:30
9	11:30	10:30	9:30	8:00	7:30
10	12:00	11:00	9:30	8:30	8:00
11	12:00	11:00	10:00	8:30	8:00
Redeveloper					
0	7:00	6:00	5:30	5:00	4:30
1	7:00	6:30	6:00	5:00	5:00
2	7:30	7:00	6:00	5:30	5:00
3	8:00	7:30	6:30	6:00	5:30
4	8:30	7:30	7:00	6:00	5:30
5	9:00	8:00	7:00	6:30	6:00
6	9:30	8:30	7:30	6:30	6:30
7	10:00	9:00	8:00	7:00	6:30
8	10:00	9:30	8:30	7:30	7:00
9	10:30	9:30	8:30	7:30	7:00
10	11:00	10:00	9:00	8:00	7:30
11	11:30	10:30	9:30	8:30	7:30

Rotary-Tube Processing

The times below are for rotary-tube processors that provide continuous agitation. You should obtain satisfactory results with a processor that changes the direction of rotation at regular intervals. Processors that use other methods of rotation may produce unsatisfactory uniformity, particularly with relatively short development times.

The following table gives times for processing at 20°C (68°F) or 24°C (75°F).

Rotary-Tube Processing Cycle

Processing Step	Temperature	Time* (min:sec)	Temperature	Time* (min:sec)
First Developer	20°C (68°F)	7:00†	24°C (75°F)	4:30†
First Rinse‡	19 to 21°C (66 to 70°F)	1:00	23 to 25°C (73 to 77°F)	1:00
Second Rinse‡		1:00		
First Bleach§		1:00¶		1:00¶
Second Bleach§				
Third Rinse		1:00		1:00
Fourth Rinse				
Clearing Bath		2:00		2:00
Redeveloper	20°C (68°F)	5:30†	24°C (75°F)	3:30†
Rinse	19 to 21°C (66 to 70°F)	0:30	23 to 25°C (73 to 77°F)	0:30
Fix		5:00		5:00
Wash**		15:00		15:00
KODAK PHOTO-FLO Solution	19 to 21°C (66 to 70°F)	0:30	23 to 25°C (73 to 77°F)	0:30
Dry	No higher than 60°C (140°F)			

* Carefully control the first-developer and redeveloper times. The times for the other steps are minimum times; you can extend them by a few minutes without significantly changing the results.

† These times are for fresh solutions. For partially used solutions or for other temperatures, use the adjusted first-developer and redeveloper times in the following table.

‡ Some rotary-tube equipment will automatically fill and dump the processing tube throughout a rinse step. You can use a single rinse "step" with this equipment if you adjust the time to assure that two fill-and-dump cycles are completed. Other equipment uses a fill-and-overflow method for rinse steps. Use two separate rinse steps with this type of equipment.

§ You can use a single bleach in some cases. See the information below.

¶ You may need to increase this time to 1 minute 30 seconds for equipment that fills and drains relatively slowly (20 seconds or longer).

** You can use KODAK Hypo Clearing Agent to save time and conserve water.

Bleach Options

Depending on the design and efficiency of your processor, you can use two bleach steps or a single bleach step to ensure satisfactory bleaching of the film.

Two-bleach process:

If your processor does not drain well, or if the rinse before the bleach step is inconsistent or insufficient, you may get better results if you use two bleach steps of one minute each. Prepare the bleach according to the mixing instructions packaged with the kit.

With two bleach steps, any carry-over of rinse water will affect only the first bleach; the second bleach will complete the required bleaching.

For both steps, use a minimum of 190 mL of bleach for each 135-36 or 120 roll of film you process. Discard the first bleach after each use. You can recover the second bleach and reuse it as the first bleach for the next batch if it is not more than one week old. Use fresh solution for the second bleach for each batch.

Note: With a two-step bleach, the time required to fill and drain the tube becomes a significant portion of the total bleach time. In some cases, this can lead to nonuniformity (streaking). Processing fewer rolls per batch can help prevent streaking, because the tube can fill to capacity more rapidly and the concentration of bleach by-products is reduced.

With some processors, the combination of a short total bleach time and the rotary agitation may cause streaking in highlights or midtones. In these cases, uneven bleaching leads to uneven redevelopment later in the process. You can reduce or eliminate streaking by increasing the two bleach steps from one minute to 1½ minutes each. Use bleach that is *one-half* the normal working strength. *For both steps, you must use a minimum of 280 mL of bleach for each roll of 135-36 or 120 film.* Do *not* reuse any bleach from this two-step procedure.

This procedure is useful in processors that will allow a larger volume of solution to be pumped into the tube than is normally required.To ensure satisfactory bleaching with some equipment, you'll need to process fewer rolls per batch than the tube will hold.

Single-bleach process:

With many rotary-tube processors, a single-step, 2-minute bleach will provide optimum results. Use bleach prepared according to the mixing instructions packaged with the outfit.

Set automatic processors to provide at least two fill-and-drain cycles of rinse water before the bleach step.

You must use a minimum of 190 mL of bleach for each 135-36 or 120 roll of film that you process. If your processor cannot provide 190 mL of bleach per roll, process fewer than the maximum number of rolls per batch to ensure satisfactory bleaching. *Do not increase the bleach time or the concentration of the bleach if your processor cannot provide the appropriate volume*. You can damage the film emulsion if you increase the bleach time or concentration.

Adjusted Development Times—Rotary-Tube Processing

To process the maximum number of rolls with this outfit, use the adjusted times in the following tables for the first developer and the redeveloper. Keep a record of the number of rolls you process.

To use processing temperatures other than 20°C (68°F) or 24°C (75°F), see the temperatures and times in the following tables for the first developer and the redeveloper.

Number of 135-36 or 120 Rolls per 946 mL (Quart) Processed Previously	Adjusted Times for Reusing First Developer and Redeveloper or Processing at Other Temperatures (Min:Sec)				
	20°C (68°F)	21°C (70°F)	22°C (72°F)	23°C (74°F)	24°F (75°F)
First Developer					
0	7:00	6:30	5:30	5:00	4:30
1	7:00	6:30	6:00	5:00	4:30
2	7:30	6:30	6:00	5:00	5:00
3	7:30	7:00	6:00	5:30	5:00
4	8:00	7:00	6:30	5:30	5:00
5	8:00	7:30	6:30	5:30	5:30
6	8:30	7:30	6:30	6:00	5:30
7	8:30	7:30	7:00	6:00	5:30
8	9:00	8:00	7:00	6:00	5:30
9	9:00	8:00	7:30	6:30	6:00
10	9:30	8:30	7:30	6:30	6:00
11	9:30	8:30	7:30	6:30	6:00
Redeveloper					
0	5:30	5:00	4:30	4:00	3:30
1	5:30	5:00	4:30	4:00	3:30
2	6:00	5:30	5:00	4:00	4:00
3	6:30	5:30	5:00	4:30	4:00
4	6:30	6:00	5:30	4:30	4:30
5	7:00	6:30	5:30	5:00	4:30
6	7:30	6:30	6:00	5:00	5:00
7	7:30	7:00	6:00	5:30	5:00
8	8:00	7:00	6:30	5:30	5:30
10	8:30	8:00	7:00	6:00	6:00
9	8:30	7:30	6:30	6:00	5:30
11	9:00	8:00	7:30	6:30	6:00

ADJUSTING CONTRAST

You cannot adjust the contrast of slides produced with reversal processing by changing the development time or temperature (as you can in normal processing of black-and-white negative films). Adjusting the development time or temperature will affect only the minimum and maximum densities and effective film speed. However, you can make slight contrast adjustments by modifying the first-developer solution.

When you process T-MAX 100 Film in one of the modified first developers, you'll obtain a contrast change similar to that produced by printing a negative on the next lower or higher contrast grade of black-and-white paper. Use normal development times with these modified first developers. Be sure to label the modified solution.

Note: Modifying the first developer *does not* significantly change the contrast of Technical Pan Film.

Lowering Contrast

For lower contrast, use the following mixing procedure for the first developer. Film processed in this modified first developer may require ½ to 1 stop **more** exposure than film processed in the standard developer (see "Exposure").

After mixing 946 mL (1 quart) of the first developer according to the instructions packaged with this outfit, add 40 mL of KODAK T-MAX Developer concentrate to the solution. Stir until the solution is uniform.

Increasing Contrast

For higher contrast, use one of the following three mixing procedures. Film processed in one of these modified first developers may require ½ to 1 stop **less** exposure than film processed in the standard first developer (see "Exposure").

Method 1

After mixing the first developer according to the instructions, add up to 50 grams (approximately 1 full plastic 35 mm film can) of KODAK Sodium Sulfite (Anhydrous). Stir the solution until the powder dissolves and the solution is uniform.

Note: If you add approximately 17 grams of sodium sulfite, you'll obtain about the same contrast that you'd obtain with Method 2. If you add more than 17 grams of sodium sulfite—but not more than 50 grams—you'll obtain higher contrast than you would with Method 2.

Method 2

After mixing the first developer according to the instructions, add 40 mL of the clearing-bath concentrate. Stir until the solution is uniform.

Dilute the remainder of the clearing-bath concentrate with water to make 946 mL (1 quart) of solution. The clearing-bath solution will work properly even though you've removed 40 mL of the concentrate.

Method 3

Mix the contents of the 237 mL (8-ounce) bottle of first-developer concentrate Part A with 207 mL (7 fl oz) of water. Add the contents of the bottle of first-developer concentrate Part B to produce 473 mL (1 pint) of solution. Stir until the solution is uniform.

Note: Do not combine these modified mixing methods.

ADJUSTING IMAGE TONE

To obtain a more neutral image tone in processed films, you can treat slides with KODAK Brown Toner. Follow the procedure below to treat only a few rolls of film.

Do not use metal reels, trays, or tanks to hold your toning solutions. Use reels, trays, or tanks made of a nonmetallic material such as glass, inert plastic, or hard rubber.

1. Dilute KODAK Brown Toner 1:15 with water.

   Note: *This solution is more concentrated than the solution recommended for toning black-and-white prints.* Solution that is more concentrated is required to obtain even toning with black-and-white slides.

   Use fresh toner concentrate to prepare working-strength solution. *If you are unsure about the age or condition of your toner concentrate, treat a few test frames and evaluate the results before toning irreplaceable slides.*
2. Thoroughly fix and wash slides that you will tone. If the slides are dry, soak them in water at 20°C (68°F) for approximately 2 minutes before treatment in toner.
3. Immerse the slides in the toner for 3 minutes at 20°C (68°F); agitate the film as you did in the first developer. Then wash the slides for 15 minutes in running water, or use KODAK Hypo Clearing Agent and a shorter wash.
4. Treat slides for 30 to 60 seconds in PHOTO-FLO Solution at 20°C (68°F), and then dry them normally.

Toner Capacity

You can tone up to 30 rolls of 135-36 or 120 film in 1 quart (946 mL) of diluted toner. For best results, prepare only the amount of toner that you will use during one day. Old or exhausted working-strength toner will tone images too quickly or unevenly, or may yield yellow-red images.

Alternate Toning Procedure

If you want to tone only a few rolls of film, follow this procedure to prepare an economical toning solution that you use once and then discard. The change in image tone will be less than that provided by the toner solution described above.

Very dilute solutions of KODAK Brown Toner are not stable enough to provide controllable toning results. To increase the stability of the toner, you will use one of the solutions listed in Step 1 (instead of water) to dilute the concentrate.

1. To prepare toner to treat one roll of film in an 8-ounce (237 mL) tank, start with 237 mL of one of the following solutions:
   - KODAK POLYMAX T Developer working solution
   - KODAK DEKTOL Developer working solution (diluted 1:2 from stock solution)
   - KODAK PROFESSIONAL T-MAX 100 Direct Positive Film Developing Outfit, First Developer working solution (used)
   - a solution of 10 grams of sodium carbonate (monohydrate) per litre of water
2. Add 14 drops of KODAK Brown Toner concentrate to the solution from Step 1.

   Note: To prepare a larger volume of toner, this ratio is equivalent to 3 mL of Brown Toner per 1 quart (946 mL) of the solution used to dilute the concentrate.
3. Mix the solution until it is uniform, and use it within 30 minutes of mixing.
4. Follow Steps 2 through 4 under “Adjusting Image Tone.”
5. Discard the solution after a single use.

MORE INFORMATION

Kodak has many publications to assist you with information on Kodak products, equipment, and materials.

Additional information is available on the Kodak website and through the U.S.A./Canada faxback system.

The following publications are available from dealers who sell Kodak products, or you can contract Kodak in your country for more information.

F-4016	*KODAK PROFESSIONAL T-MAX Films*
J-4S	*The Prevention of Contact Dermatitis in Photographic Work*
J-86	*KODAK T-MAX Developers*
P-255	*KODAK Technical Pan Film*

For the latest version of technical support publications for KODAK PROFESSIONAL Products, visit Kodak on-line at:
http://www.kodak.com/go/professional

If you have questions about KODAK PROFESSIONAL Products,
call Kodak.
In the U.S.A.:
1-800-242-2424, Ext. 19, Monday–Friday
9 a.m.–7 p.m. (Eastern time)
In Canada:
1-800-465-6325, Monday–Friday
8 a.m.–5 p.m. (Eastern time)

Note: The Kodak materials described in this publication for use with the KODAK PROFESSIONAL T-MAX 100 Direct Positive Film Developing Outfit are available from dealers who supply KODAK PROFESSIONAL Products. You can use other materials, but you may not obtain similar results.

Kodak Professional

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