

FILM DEVELOPING EQUIPMENT, SUPPLIES, and CHEMICALS

It is very easy to develop film at home. No special space and only a few bottles of chemistry are needed. Following is a list of Chemistry and Equipment, and some thoughts about work space.

CHEMISTRY

Developer	1 qt.	Edwal FG-7	used one-shot
Fixer	1 qt.	Kodak Rapid Fixer	mixed into 1 gallon bottle
Perma-Wash	1 qt.	Heico Perma-Wash	mixed into 1 gallon bottle
Photo-Flo	2 oz..	Kodak Photo-Flo	used one-shot

EQUIPMENT

1 - 1 gallon bottle for Fresh Fixer
1 - 1 gallon bottle for Used Fixer
1 - 1 gallon bottle for Fresh Perma-Wash
1 - 1 gallon bottle for Used Perma-Wash
total = 4 - 1 gallon bottles

1 - Patterson Developing tank
2 - Patterson Developing Reels (tank comes with 1 reel)
1 - Patterson 1.5 oz. Beaker
2 - Patterson 22 oz. Beaker

1 - Changing Bag
can opener
scissors

Negative Sleeves (7 rows of 5 negs each)
Lupe 8x magnifying glass to examine the negatives (optional)

WORK SPACE

a dark or low light space to roll film

I used to use an interior storage room in the basement of my Mother's house, with no windows, with the lights turned off, and late at night, just to be sure.

a dust free space to hang the negatives to dry

I used to use the shower. I would place a hair dryer in the bottom of the shower and run it facing upward to warm the space. Then I would turn it off and let things settle for 10 minutes or so. I would then hang the negatives in the warm space and they would dry relatively quickly..

developer mix chart

EDWAL FG-7 mixed 1:15

<u>film</u>	<u>Edwal</u>	<u>water</u>	<u>total</u>
1 roll - 35 mm	5/8 oz.	9 3/8 oz.	10 oz.
1 roll - 2 1/4"	1 1/8 oz.	16 7/8 oz.	18 oz.
2 rolls - 35 mm	1 1/4 oz.	18 3/4 oz.	20 oz.
2 rolls - 2 1/4"	2 1/4 oz.	33 3/4 oz.	36 oz.
5 rolls - 35 mm	3 1/8 oz.	46 7/8 oz.	50 oz.

<u>film</u>	<u>Edwal</u>	<u>water</u>	<u>total</u>
1 roll - 35 mm	18 ml.	272 ml.	290 ml.
1 roll - 6 cm	31 ml.	469 ml.	500 ml.
2 rolls - 35 mm	36 ml.	544 ml.	580 ml.
2 rolls - 6 cm	62 ml.	938 ml.	1000 ml.
5 rolls - 35 mm	90 ml.	1360 ml.	1450 ml.

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- fill a beaker with the right amount of water at the temperature that will be used to develop
add the proper amount of Edwal developer - this is the working solution
 - use the time/temp chart below to determine the developing time
according to the film type and temperature of the working developer
 - after pre-soaking, pour the developer into the film developing tank
then start the clock and agitate the tank for the first 30 seconds
 - thereafter, agitate consistently 5 seconds every 30 seconds for the remaining time
 - begin pouring out the developer 15 seconds before the developing time is up
 - pour water into the tank as soon as the clock stops to halt the action of the developer
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time / temp chart

EDWAL FG-7 mixed 1:15

developing times in minutes, at the **adjusted film speed**,
for the following temperatures in degrees F

	<u>65°</u>	<u>68°</u>	<u>70°</u>	<u>72°</u>	<u>75°</u>	<u>78°</u>
Tri-X ₃₂₀ , add half a minute for HP5+ ₃₂₀	14	12	10 ³ / ₄	9 ³ / ₄	8 ¹ / ₄	7 ¹ / ₄

F I L M D E V E L O P M E N T

- 0 **mix developer** _____ see developer mix chart
- 1 **presoak** _____ in water _____ 1'
- 2 **develop*** _____ in Developer _____ see time/ temp chart
- 3 **stop** _____ with water _____ 1'
- 4 **fix*** _____ in new Fix and save _____ 3~5'
- 5 **rinse** _____ in water _____ 1'
- 6 **perma-wash*** _____ in Perma-Wash _____ 2'
- 7 **wash** _____ in Wash Tube or tray _____ 5'
- 8 **photo-flo** _____ squeegee off _____ 1'
- 9 **dry** _____ in Film Dryer _____ 12'
- 10 **cut and store** _____ at Light Table
- 11 **dry tank & reels** _____ and store in drawers

*agitate these active chemicals 5 seconds every 30

chemical recipes/ **FILM**

EDWAL

*mix 1:15 for each 20 oz. tankful
1.25 oz. added to 18.75 oz. water*

GAMMA PLUS

*mix 1:12 for each 20 oz. tankful
1.5 oz. added to 18.5 oz. water*

STOP

with water

RAPID FIX

mix working Film Fix solution

*64 oz. water + 32 oz. Part A with rapid agitation
add 3.5 oz. Part B (hardener) with rapid agitation
fill to 1 gallon (add 28.5 oz. water)*

PERMA WASH

mix 3 oz. per gallon (directions on the bottle)

PHOTO FLO 200

*mix 1/10 oz. per gallon
3 ml. added to 580 ml. water*

chemical recipes/ **PAPER**

DEKTOL

mix from powder into a 5 gallon vat

4.5 gallons of water at 90 - 100° F

add Dektol powder

*stir for half an hour until all powder is dissolved!
fill vat to a full 5 gallons*

use this solution mixed 1:2

1 beaker Dev with 2 beakers water

PLATINUM II

mix 1:9

7 oz. added to 63 oz. Water = half a gallon

STOP

mix 1:9 from the white cube

7 oz. added to 63 oz. Water = half a gallon

NON-HARD FIX

mix working Non-Hard Paper Fix

*64 oz. water + 16 oz. Part A with rapid agitation
fill to 1 gallon (add 48 oz. water)*

PERMA WASH

mix 3 oz. per gallon (directions on the bottle)

chemical recipes/ **TONERS**

SEPIA & BLEACH

dissolve each packet

into 1 quart of water each

set up

- 1 holding tray w/ untoned reference print*
- 1 tray pre-soak*
- 1 tray **bleach***
- 1 tray rinse*
- 1 tray **sepia***
- 1 tray rinse*

SELENIUM

mix 1:9

3.2 oz. added to 28.8 oz. water = 1 quart

set up

- 1 holding tray w/ untoned reference print*
- 1 tray pre-soak*
- 1 tray **selenium***
- 1 tray rinse*

wash

prints after toning

an additional 20 ~ 30 minutes