DARKROOM FORMULAS

FAVORITE DARKROOM RECIPES
TO INSPIRE CREATIVITY

Table of Contents

PRINT DEVELOPERS

D-72
(1 Liter)
(Similar To Dektol)

Formula

- 750 ml Water (52 °C)
- 3.0g Metol
- 45.0g Sodium Sulfite (anh)
- 12.0g Hydroquinone
- 80g Sodium Carbonate (mono)
- 2.0g Potasium Bromide
- Water To Make 1 Liter

Notes:

- Similar to Dektol
- Dilute 1:1 - 1:4
- For less contrast and warmer tones use the higher dilutions.
- For standard printing, I use 1:2
- Develop 1.5 to 3 minutes
- All around great general developer
- I personally use this developer a lot with Fomabrom Variant 111, Ilford Warmtone, and Classic MG papers and get very pleasing neutral tones.
- A light selenium toning will get rid of any greenish cast on warmer papers

D-72
(5 Liters)
(Similar To Dektol)

Formula

- 3.85 Liters Water (52 °C)
- 15.0g Metol
- 225g Sodium Sulfite (anh)
- 60.0g Hydroquinone
- 400g Sodium Carbonate (mono)
- 10.0g Potasium Bromide
- Add 1 Liter Water / 5 Liters Total

Notes:

- Similar to Dektol
- Dilute 1:1 - 1:4
- For less contrast and warmer tones use the higher dilutions.
- For standard printing, I use 1:2
- Develop 1.5 to 3 minutes
- All around great general developer
- I personally use this developer a lot with Fomabrom Variant 111, Ilford Warmtone, and Classic MG papers and get very pleasing neutral tones.
- A light selenium toning will get rid of any greenish cast on warmer papers

ANSCO 130
(1 Liter)

Formula

- 750 ml Water (52 °C)
- 2.2g Metol
- 50.0g Sodium Sulfite (anh)
- 11.0g Hydroquinone
- 78.0g Sodium Carbonate (mono)
- 5.5g Potasium Bromide
- 11.0g Glycin
- Water To Make 1 Liter

Notes:

- Can be used as a stock solution or Dilute 1:1 - 1:2. For less contrast and warmer tones use the higher dilution. For standard printing, I use 1:1
- I reuse my 1:1 working solution for many sessions and top it off with fresh developers as needed. Ansco 130 has a very long shelf life in solution
- Develop 1.5 to 6 minutes
- Great all-around general developer, I use a lot with Ilford Warmtone paper and get very pleasing neutral tones
- A light selenium toning will get rid of any greenish cast on warmer papers
- The best source for Glycin in the U.S. is the Photographers Formulary

ANSCO 130
(5 Liters)

Formula

- 3.85 Liters of Water (52 °C)
- 11.0g Metol
- 250.0g Sodium Sulfite (anh)
- 55.0g Hydroquinone
- 390.0g Sodium Carbonate (mono)
- 27.5g Potasium Bromide
- 55.0g Glycin
- Add 1 Liter Water / 5 Liters Total

Notes:

- Can be used as a stock solution or Dilute 1:1 - 1:2. For less contrast and warmer tones use the higher dilution. For standard printing, I use 1:1
- I reuse my 1:1 working solution for many sessions and top it off with fresh developers as needed. Ansco 130 has a very long shelf life in solution
- Develop 1.5 to 6 minutes
- Great all-around general developer I use a lot with Ilford Warmtone paper and get very pleasing neutral tones
- A light selenium toning will get rid of any greenish cast on warmer papers
- The best source for Glycin in the U.S. is the Photographers Formulary

ID-62
(1 Liter)
(Ilford PQ Dev)

Formula

- 750 ml Water (52 °C)
- 0.5g Phenidone
- 50.0g Sodium Sulfite (anh)
- 12g Hydroquinone
- 60.0g Sodium Carbonate (anh)
- 2.0g Potasium Bromide
- 20 ml Benzotriazole 1% sol.
- Water To Make 1 Liter

Notes:

- Ilford PQ Developer
- Dilute 1:3.
- Higher contrast use 1:1 - 1:2
- Develop 1.5 to 3 minutes
- Great all-around Neutral to cool tone developer.
- Produces steely greys on Ilford MG Classic
- Great for split toning Ilford MG Classic with light sepia toning for steely gray mids and shadows while using the sepia to produce warm highlights

ID-62
(5 Liters)
(Ilford PQ Dev)

Formula

- 3.85 Liters of Water (52 °C)
- 2.5g Phenidone
- 250.0g Sodium Sulfite (anh)
- 60g Hydroquinone
- 300.0g Sodium Carbonate (anh)
- 10.0g Potasium Bromide
- 100 ml Benzotriazole 1% sol.
- Add 1 Liter Water / 5 Liters Total

Notes:

- Ilford PQ Developer
- Dilute 1:3.
- Higher contrast use 1:1 - 1:2
- Develop 1.5 to 3 minutes
- Great all-around Neutral to cool tone developer.
- Produces steely greys on Ilford MG Classic
- Great for split toning Ilford MG Classic with light sepia toning for steely gray mids and shadows while using the sepia to produce warm highlights

ID-78
(1 liter)
(Ilford WT Dev)

Formula

- 750 ml Water (52 °C)
- 0.5g Phenidone
- 50.0g Sodium Sulfite (anh)
- 12.0g Hydroquinone
- 62.0g Sodium Carbonate (anh)
- 4.5g Potasium Bromide
- Water To Make 1 Liter

Notes:

- Ilford Warmtone Developer
- Dilute 1:1 - 1:3
- Higher contrast use 1:1
- Warmer tones use 1:3
- Develop 1 to 3 minutes
- Great all-around warm tone developer.
- Produces beautiful tones on Ilford Warmtone, Fomabrom Variant 111, and Fomatone papers
- Once sold as Neutol WA and Ilford Warmtone developer

ID-78
(5 liters)
(Ilford WT Dev)

Formula

- 3.85 Liters of Water (52 °C)
- 2.5g Phenidone
- 250.0g Sodium Sulfite (anh)
- 60.0g Hydroquinone
- 310.0g Sodium Carbonate (anh)
- 22.5g Potasium Bromide
- Add 1 Liter Water / 5 Liters Total

Notes:

- Ilford Warmtone Developer
- Dilute 1:1 - 1:3
- Higher contrast use 1:1
- Warmer tones use 1:3
- Develop 1 to 3 minutes
- Great all-around warm tone developer.
- Produces beautiful tones on Ilford Warmtone, Fomabrom Variant 111, and Fomatone papers
- Once sold as Neutol WA and Ilford Warmtone developer

GAF 135
(1 Liter)

Formula

- 750 ml Water (52 °C)
- 1.6g Metol
- 24.0g Sodium Sulfite (anh)
- 6.6g Hydroquinone
- 24.0g Sodium Carbonate (mono)
- 2.8g Potasium Bromide
- Water To Make 1 Liter

Notes:

- Warmtone Developer
- Dilute 1:1 - 1:3.
- Higher contrast use 1:1
- Warmer tones use 1:3
- Develop 1 to 3 minutes
- Great all-around warm tone developer.
- Produces beautiful tones on Ilford Warmtone, Fomabrom Variant 111, and Fomatone papers
- Toss up for me between this and ID-78

GAF 135
(5 Liters)

Formula

- 3.85 Liters of Water (52 °C)
- 8.0g Metol
- 120.0g Sodium Sulfite (anh)
- 33.0g Hydroquinone
- 120.0g Sodium Carbonate (mono)
- 14.0g Potasium Bromide
- Add 1 Liter Water / 5 Liters Total

Notes:

- Warmtone Developer
- Dilute 1:1 - 1:3.
- Higher contrast use 1:1
- Warmer tones use 1:3
- Develop 1 to 3 minutes
- Great all-around warm tone developer.
- Produces beautiful tones on Ilford Warmtone, Fomabrom Variant 111, and Fomatone papers
- Toss up for me between this and ID-78

FILM DEVELOPERS

Formula

- 750 ml Water (52 °C)
- 2.0g Metol
- 100.0g Sodium Sulfite (anh)
- 5.0g Hydroquinone
- 2.0g Borax
- Water To Make 1 Liter

Notes:

- Dilute 1:1
- Sold as Kodak D-76 and very similarly Ilfords ID11
- Great film developer with excellent sharpness and tonal scale

Ansco 22

Formula

- 750 ml Water (52 °C)
- 0.8g Metol
- 40.0g Sodium Sulfite (anh)
- 8.0g Hydroquinone
- 50.0g Sodium Carbonate (mono)
- 5.0g Potasium Bromide
- Water To Make 1 Liter

Notes:

- High Contrast Developer
- Use undiluted
- I have found development times from 1 - 8 minutes useful
- Use with lithographic and line film for high-contrast results
- I often use it for making masks with Arita Lith film

TONERS

GAF - 231 (Direct Gold Toner)

Formula

- 625 ml Distilled Water
- 88.0g Ammonium Thiocyanate
- 50 ml Gold Chloride 1% sol.
- Cold Water To Make 835ml

Notes:

- The above formula was adjusted from the original to get two working solutions from the expensive gold chloride solution (I typically buy the 100ml bottles)
- The original published formula below
- Produces blue tones on warm tone papers and lith prints as well as colorful pink and salmon tones on sepia-toned prints.
- I use this toner a lot for lith prints when I want a pretty blue hue
- Has a significant increase in contrast with some papers

Published Formula:

- 750 ml Distilled Water
- 105.0g Ammonium Thiocyanate
- 60 ml Gold Chloride 1% sol.
- Cold Water To Make 1 liter

Sepia Toner (variable)

Formula

Sol. A - Bleach

- 100.0g - Potassium Ferricyanide
- 100.0g - Potassium Bromide
- Water To Make 1 Liter

Sol. B - Bleach

- 100.0g - Thiocarbamide
- Water To Make 1 Liter

Sol. C - Activator

- 100.0g - Sodium Hydroxide
- Water To Make 1 Liter
- *** Always add Sodium Hydroxide SLOWLY to water - NOT the other way around ***

Notes:

- The sepia color can be varied from yellow to dark purple-brown
- Known as odorless sepia toner as it does not produce the sulfur smell of sulfide-based toners
- Works great with all modern papers all producing slightly different colors and results
- Great way to achieve "split toning"
- *** See next page for color table and further notes***

Sepia Toner (Variable)

Further Instructions

P. Bromide Bleach

- Print may be fully bleached in a strong bleach solution (1:4) for full sepia toning
- For more control, dilute the bleach further by 10% - 40% as a starting point for split toning
- Once bleached give the print a good rinse to remove all the bleach
- Once rinsed move the print to the toning bath.
- Mix your toning bath for the desired color (see table below)
- The color achieved in the toner (sol B) can be varied by how much activator (sol C)is added. Use the table below as a guide

Solution B (Toner)	Solution C (Activator)	Water.	Color Produced
5 parts	1 parts	50 parts	Yellow - Sepia
4 parts	2 parts	50 parts	Sepia
3 parts	3 parts	50 parts	Mid-Browns
2 parts	4 parts	50 parts	Rust Brown
1 part	5 part	50 parts	Purple Brown

Additional Notes:

- Solutions for yellows and lighter browns are more likely to lead to some highlight density loss - Some additional highlight exposure is suggested.
- For VERY light highlight toning on Ilford MG Classic I use 12ml Bleach (Sol A) to 1liter of water and bleach for 30 sec to 1 min. (further dilution may be necessary)

Sepia Toner (Stinky AKA - Sodium Sulfide)

Formula

Sol. A - Bleach

- 100.0g - Potassium Ferricyanide
- 100.0g - Potassium Bromide
- Water To Make 1 Liter

Sol. B - Toner

- 10.0g - Sodium Sulfide
- Water To Make 1 Liter

Notes:

- Produces beautiful classic sepia warm tones.
- Gives off a strong odor of sulfur (rotten eggs)
- Use in a well-ventilated area
- The gas it gives off can fog emulsions so DO NOT USE in the same room as paper, film etc...
- Print may be fully bleached in a strong bleach solution (1:4) for full sepia toning
- For more control, dilute the bleach further by 10% - 40% as a starting point for split toning
- For VERY light highlight toning on Ilford MG Classic I use 12ml Bleach (Sol A) to 1liter of water and bleach for 30 sec to 1 min. (further dilution may be necessary)

Kodak T-8 (Stinky AKA - Brown Toner)

Formula

- 750 ml Water (52 °C)
- 7.5g Potassium Polysulfide
  (liver of sulfur)
- 2.5g Sodium Carbonate (mono)
- Water To Make 1 Liter
  (Strain with coffee filter if necessary)

Notes:

- Produces warm tones.
- Use at full strength as a direct toner
- Good replacement for Kodak Brown Toner
- Warm papers react fast - I tend to fully submerge print for 10-15 seconds then place it in a water bath for 10-15 seconds and then finally in a "stop bath" of hypo clear (see page 22)
- Cold-tone bromide papers can take 10-20 minutes in full strength toning bath
- Gives off a strong odor of sulfur (rotten eggs)
- Use in a well-ventilated area
- The gas it gives off can fog emulsions so DO NOT USE in the same room as paper, film etc...
- Leaves print emulsion soft and delicate. Handle prints carefully and consider a print emulsion hardener (see page 18)

Print Hardner F-5a

Formula

- 600 ml Water (52 °C)
- 75.0g Sodium Sulfite (anh)
- 235ml Acetic Acid 28%
- 375.0g Boric Acid Crystals
- 75.0g Potassium Alum (dodecahydrate)
- Water (20 °C) To Make 1 Liter

Notes:

- Should be used following toning with polysulfide toners such as Kodak T-8
- Diluted 1:8 with water for use

MISC.

TF-3 Fixer (alkaline)

Formula

- 800 ml Ammonium Thiosulfate (60%)
- 60.0g Sodium Sulfite
- 5.0g Sodium Metaborate
- Water to make 1 liter

Notes:

- Dilute 1:4 for film or paper
- Fix films for 3 min (agitation 30sec/min)
- Fix paper for 1 min (constant agitation)
- I use this for films developed in pyrocat-hd following a water stop bath where the alkaline fix is preferred to protect staining
- Similar to Photographer Formulary's TF-4

Stop Bath (simple)

Formula

- 750 ml Water
- 10.0g Sodium Bisulfite
- Water to make 1 liter

Notes:

- If I run out of indicator stop bath from Ilford I use this for general printing and lith printing
- Mix just prior to use
- Make a fresh bath every so often when the printing session goes long

Hypo Clear (simple)

Formula

- 750 ml Water
- 25.0g Sodium Sulfite
- Water to make 1 liter

Notes:

- I use this as a simple hypo clear for fiber-based papers prior to a thorough wash
- Mix just prior to use
- Replaces thiosulfate through ion exchange with sulfite ions that are more easily washed out of the paper.
- 3-5 minutes with agitation

Bleach (Highlight Brightener)

Formula

- 750 ml Water (52 °C)
- 100.0g - Potassium Ferricyanide
- 100.0g - Potassium Bromide
- Water To Make 1 Liter

Notes:

- Flattening Reducer
- Same formula as the variable sepia toner bromide bleach
- I pour some off into a little dropper bottle for use selectively on prints
- Add 10 drops to 25ml water for controllable highlight bleaching (adjust concentration to suit your needs)
- Use a small soft brush to apply and running water to stop the action
- Re-fix print when done bleaching
- This formula can be used if redevelopment in the developer is needed but has a higher risk of a tonal shift than the farmer's reducer

Farmers Reducer (Highlight Brightener)

Formula

Solution A

- 350 ml Water (20 °C)
- 38.0g Potassium Ferricyanide
- Water To Make 1/2 Liter

Solution B

- 750 ml Water (20 °C)
- 240.0g Sodium Thiosulfate
- Water To Make 1 Liter

Notes:

- Cutting Reducer
- The two solutions should have a long shelf life if stored in dark brown bottles. Once mixed, they have a short life of a few minutes.
- Mix 1 part A to 4 parts B for a working solution. Dilute further as necessary
- Once combined the mixture will exhaust in minutes
- Use a small soft brush to apply and running water to stop the action

TECHNICAL

Anyhdrous vs. Monohydrate

- Anhydrous means without water
- Monohydrate means one molecule of water has attached to a molecule of the chemical
- The water molecule adds approximately 17% more weight
- To convert one to the other simply multiply or divide by 17%

EXAMPLE:

50.0g Sodium Sulfite (anhy)
50.0 x 1.17 = 58.5g (mono

50.0g Sodium Sulfite (mono)
50.0 / 1.17 = 42.74g (anh)

Making a % Solution

- Percentage solutions are made up to make it easy to measure small amounts of chemicals accurately
- Depending on the chemical some may need hot water to dissolve properly others may not

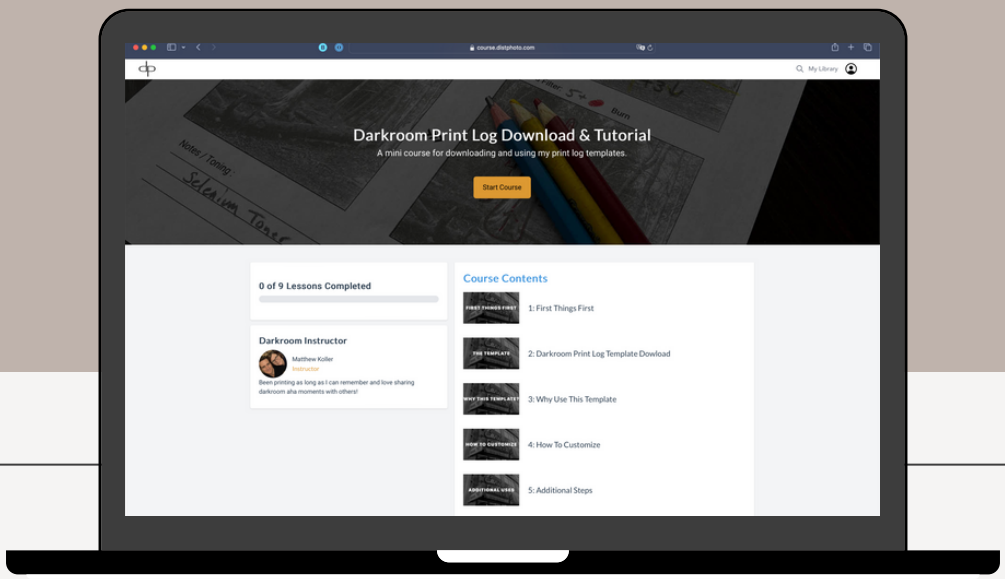
EXAMPLE:

1% Solution
(10g into 1000ml water)

- 750ml Water
- 10.0g chemical
- water to make 1 liter

10% Solution
(100g into 1000ml water)

- 750ml Water
- 100.0g chemical
- water to make 1 liter



DARKROOM PRINT LOG TEMPLATE & MINI-COURSE

- Save time, money & paper when learning how to print
- Use proven templates and techniques to print your vision
- Make profesional prints that SING
- Get organized and build confidence in your system
- Learn how to reproduce prints with ease - STOP starting over.
- Learn & progress faster

GET MORE INFO

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