

# Caffenol

## developing method

**Andrew Sanderson** offers an unusual coffee-based alternative to the standard film developer. No milk and sugar, thanks...

**T**hose of you who shoot film and process your own negatives, or are perhaps thinking of doing so, may have noticed increasing reference on forums and blogs to a new developer that goes by the name of Caffenol. This was certainly the case for me, until it got to the point where I thought I ought to check it out. If more and more people were using it, then perhaps there was more to it than just the novelty of using household products to develop a film.

To put it simply, Caffenol is a tried-and-tested process that involves developing film in alternative substances, such as vitamin C and instant coffee, which can be found in the home or bought in a supermarket or pharmacy. While this may sound far-fetched, the results, which can be viewed online, speak for themselves.

I contacted an American friend via Facebook who uses this process, and asked if she would share her recipe. She very kindly did, and gave me a tip: the cheapest instant coffee works best! I immediately popped down to Lidl and got myself a large

### THE ORIGINS OF CAFFENOL

THE TECHNICAL photographic chemistry class at Rochester Institute of Technology in 1995, led by Dr Scott Williams, invented a method of developing film using household items. They tested mixtures of tea and coffee combined with agents to balance the pH and successfully made printable images for exposed film. They didn't call it Caffenol at the time, but it later became commonly known this way.

**Right: This example from Flickr photographer De Ferschter shows just how good the results of developing in Caffenol can be. De Ferschter shot this image using a Hasselblad 500 camera and Kodak T-Max 100 film. He then developed the film in a Caffenol solution**

jar of instant coffee for less than £2, as well as some Sainsbury's Dri Pak Fine Soda Crystals (this is the decahydrate type, see below). Last on my list was finding some vitamin C, which I thought would be really easy. It turned out to be a bit trickier, though, as a few places had cold remedies and concoctions with vitamin C in them, but the pure stuff proved elusive. I located a tub of it in Holland & Barrett, but only in a large size. As the formula requires just a small amount, I expect I will have enough for many years to come.

I began my tests with single sheets of 5x4in film so I could shoot and process one at a time and quickly establish a working time. The first sheet I put through came out over-processed, so I knew the formula worked – in fact, it worked too well. I had to shoot another and cut the processing time.

The second sheet worked perfectly, and the negative quality looked really good. When I did a contact print from it I could see that the tonality was so good it compared with the best developers available. Since then, I've been experimenting with a couple of other film types to establish working times.

Usefully, there are quite a few online resources that give times and alternative mixtures, and I've altered my formula slightly since reading these. I'm not claiming to be an expert, but there are a number of people who have dedicated years trying to perfect this kind of



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developing process. However, while certain online resources are written by some clever and dedicated people, there are also total beginners who are happy with any kind of result and may not be aware of their mistakes. I had to read quite a few versions, formulas and explanations to get to the relevant information.

A few important points emerged during my research:

1. An acid-stop bath can cause bubbles in the emulsion and these will show up as white spots on your film. A few rinses of clean tap water between development and fixing works better.
2. Don't use baking soda – it's not the same.
3. Don't use decaffeinated coffee.
4. There are three types of washing soda/sodium carbonate

and they can have a big effect on your process. The dry form (known as anhydrous) is a powder and is the most effective. Next effective is monohydrate, while the worst are decahydrate crystals. You'll need to check which type you have, and alter your proportions of soda in the formula accordingly. There are sections on the Caffenol blogs ([www.caffenol.blogspot.co.uk](http://www.caffenol.blogspot.co.uk) or [www.caffenol.org](http://www.caffenol.org)) and in the Caffenol cookbook ([www.caffenol-cookbook.com](http://www.caffenol-cookbook.com)) about how to do this according to your type of crystal.

In the USA, many people buy Arm & Hammer washing soda, which works just fine. However, here in the UK all I could find was Sainsbury's Dri-Pak crystals. This is unfortunately the decahydrate version, which needs much more adding to the formula as it's not the

'dry' type. According to the Caffenol blog, for decahydrates it's recommended you use 2.7x the normal quantity.

The developer, being very new, is constantly being altered and 'improved'. New versions are popping up all the time and it's become the practice to add letters after the name to identify their use and type. Caffenol C-M, Caffenol C-H and Caffenol C-L are the most common. They refer to medium-speed films (M), high-speed films (H) and stand development (L, for long development). The basic formula seems ideally suited to medium/slow films, while the faster films require the addition of a very small amount of potassium bromide to prevent chemical fogging.



## Mixing up and processing

Andrew offers a quick and easy step-by-step guide to get you developing your film

THE FOLLOWING is the basic recipe, but it may need to be altered slightly according to the type of film and washing soda you use.

**1** Fill two small containers with 170ml of tap water in each. This is enough to cover 35mm in a tank, but 120 film will require 50% more water and ingredients.

**2** In one, measure out five teaspoons of instant coffee (slightly heaped) and half a teaspoon of vitamin C. Stir well and leave it to stand for a while.

**3** In the second container, measure out three-and-a-half teaspoons (slightly heaped) of washing soda (the dry type if possible) and then stir well. Note: don't be alarmed if the water gets warm as the soda dissolves, as this is quite normal. There will probably be a few hard bits in the bottom, which won't dissolve. That's fine. However, when you're mixing the two solutions sieve out these bits to remove them from the mixture.

**4** Make sure you don't mix your two solutions until you're just about to start the film development process. Do it when your film is loaded into the tank, but make sure you let it stand for five minutes just to let the bubbles settle.

**5** The typical processing time is around eight or nine minutes at 20°C (experiment with a test film, or look up a developing time online).

**6** Discard the solution after use and – this is the important bit – do not re-use.

**7** Rinse the film until the water runs clear, then fix, wash and hang up to dry.

If teaspoon measurements aren't as accurate as you'd like and you'd prefer a more scientific measuring system, use the spoon method the first time, but weigh how much you use and write down the amount.

If your negatives come out very faint and thin, you've probably used the wrong quantity of soda. A look on the Caffenol blogs, or a question on The Analog Photography Users' Group ([www.apug.org](http://www.apug.org)) will probably get you the answer you require.