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## FA-1027 Developer

### Technical Information

A photo chemist told me he could produce a liquid concentrate film developer for Fine Art Photo Supply, which would produce the kinds of negatives with Ilford HP-5 film I wanted; that is, negatives more like Tri-X/HC-110 negatives: clear and brilliant, with very distinct tonal separation in the high values. Unlike Tri-X/HC-110 however, I wanted the mid and lower tones bright and vibrant; not be plunged into dark murkiness – that familiar bothersome quality of the Tri-X/HC-110 combination. He created the developer formula and I was astonished after using it. The developer is called **FA-1027**.

**FA-1027** is a “high acutance” developer. It produces a “hard edge” in the grain structure of negatives. This gives an impression of great sharpness and clarity. Ansel Adams refers to acutance as “edge sharpness” within the image (*\*The Negative, Little Brown & Co, 1981.*).

While not a “fine grain” developer per se, the grain edge sharpness does give the impression of fine grain in prints. This effect is similar to those in developers such as HC-110 (with Tri-X), but without the distressing high contrast characteristics of that developer; that is, the gloomy darkening of all values below the mid tones (Zone VI).

**FA-1027** produces a very fine negative with Ilford HP-5 film, for example. There is a very distinct high value separation in Zones VI and above. In Zones V and below, there is just as impressive a separation, without the dumping of those values into murky darkness; as is the case with the Tri-X/HC-110 effect. The chemist responsible for the **FA-1027** formula tells me that 2 restrainers, Potassium Bromide and Benzotriazole are responsible for this phenomenon; that one affects the upper end of the film curve (high values) and the other affects the low end (low values). I am told this same effect will obtain with all films: *fabricated grain* emulsions (Delta, T-Max), as well as *random grain* emulsions (FP-4, HP-5, Tri-X, etc). In addition to the 2 restrainers, the precise balance between Phenidone and Hydroquinone in the developer contributes to its splendid performance with all black and white films.

I have also found that this is a superior developer for expanded and contracted development. I photographed some plants in my kitchen against a sunlit white window curtain – a very high contrast situation. Placing the curtain on Zone IX and giving 30% less development time in FA-1027 (4 minutes in my case) obtained a negative which was decidedly lower in contrast. It wasn't simply an overall loss of density with a bit of a lower contrast result, this was almost like a Super XX contraction (minus development). The tones remained distinctly separated, and full of crisp local contrast in the low and high values.

There was no “fuzziness” and none of that characteristic “dead” separation I’ve so often gotten with other developers in minus development situations. It’s a new, notably better result.

Fine Grain – A fine grain film developer, traditionally, has been one where no hydroquinone is used, and sodium sulfite is used as a silver reducing agent along with another agent such as metol (D-23, D-25). The metol activity is not very aggressive, and the sodium sulfite acts upon the grain, “softening” it. This does give a finer grain effect, but with a loss of *acutance*. Negatives are “fuzzy” looking - soft edged. I suspect this is the case with Microdol-X as well.

D-76 developer is similar to these but does contain Hydroquinone, so its activity is higher. It’s developing action takes place before the sulfite can begin to work as a reducing agent. D-76, however contains no restrainers. This may be the reason for the “piled up” high values in negatives made from this developer. The tones are there, but they are not widely spaced and well defined, and as a result the local contrast within the tones is minimal. D-76 negatives show a compression in tone quality and local contrast. The effect is similar to listening to a symphony orchestra with a tiny transistor radio rather than a quality sound system.

With HP-5 film, I have found that DD-X developer does indeed give a distinctly separated tonal quality, not only in the very important high values, but throughout the low to mid tones as well. DD-X however, produces a somewhat dense, cloudy negative. For the same tonal range to be duplicated, a DD-X negative requires twice the printing time. The DD-X negatives also have an indistinct, “foggy” look to them. The effect is similar to the “fine grain” developer affect described earlier. This may be due to unrestrained developing agents acting upon unexposed silver. Fog can be printed through, but the HP-5/DD-X negatives could be bothersome to print, with regard to evenness of edge to edge density. Anyone who has ever tried to print an uneven negative of a snow scene will know what I mean. DD-X is also made for a 1:4 dilution, and is expensive to use as a one shot developer.

**FA-1027** gives a beautiful, distinct rendering of tones with HP-5. The negatives are crystal clear and brilliant. They print easily, in less time, and with greater consistency edge to edge; than HP-5 negatives developed in DD-X. The tonal quality is also a bit “cleaner” or “sharper” looking, even in a print from a 4x5 negative. Again, this is greater acutance. Acutance, for me, may well be the most important quality in any film developer; a portrait photographer, however, may well indeed want a softer look. Certainly no one answer suffices for every question.

(Why is it, that with all the resources at their disposal, large photo manufacturers have not produced a formula like **FA-1027**? I believe there are several reasons. One is that there are research chemists employed by photo companies who are happy to tow the corporate line and not make any waves. Another is that there are, or were, many talented chemists who have developed wonderful formulae like **FA-1027**, but who were stonewalled by upper management; being told such developers, however well, would cut into the sales of D-76, and weaken its market appeal. Still another reason is that many chemists, knowing the effects developers have on film emulsions, are not very keen on the finer differences between, for example, distinct local contrast in high values, and high value compression – in an aesthetic sense. In other words, *tone-blind*. It’s a slide-rule mentality. They see the cold facts in a

laboratory context, but don't understand its importance in the same way a sensitive photographer would.)

If D-76 is such a lousy performer, why does Kodak keep telling us it's the best selling developer in the world? For the same reasons the best selling car in the US isn't the best quality one, the best selling beer is just "piss"; and for the same reason the best selling exposure meter is the worst performer in terms of quality. And come to that, for the same reason most photography we see today is just plain bad, and why popular music today is abominable. A mass audience is always a poor audience. "Best Selling" is the least important criterion to trust.

**FA-1027** is a very concentrated, economical formula which is best used as a one shot developer. Recommended dilutions are 1:9 and 1:14, though the developer can be diluted as much as 1:19. 100 milliliters of concentrate will process (6) 8x10 sheets of film or equivalent (6 rolls of film, 12 5x7's, 24 4x5's). 100 milliliters is a little over 3 US ounces. I add 100 ml of **FA-1027** concentrate to either 900 ml of water (1 liter working solution); or to 1400 ml of water (1-1/2 liter working solution). Shelf life of FA-1027 concentrate is at least 2 years.

**Development Times, in minutes, at 68 degrees F:**

	<b>1:9</b>	<b>1:14</b>
<b>Iford HP-5</b>	<b>7-1/2</b>	<b>11</b>
<b>Iford FP-4</b>	<b>N/R</b>	<b>6-7</b>
<b>Iford Delta 100</b>	<b>6-1/2</b>	<b>9</b>
<b>Iford Delta 400</b>	<b>8</b>	<b>15</b>
<b>Iford Pan F</b>	<b>N/R</b>	<b>5</b>
<b>Kodak Tri-X (TXP)</b>	<b>5-1/2</b>	<b>8</b>
<b>Kodak T-Max 100</b>	<b>6-1/2</b>	<b>9-1/2</b>
<b>Kodak T-Max 400</b>	<b>8</b>	<b>11</b>
<b>Kodak T-Max 3200</b>	<b>14</b>	<b>N/R</b>

Times shown are for tray development or roll film tanks. For machine development times, please e-mail or call.