

How to Use Kodak Selenium Toner

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General Notes

Selenium toner is a direct toner. It changes a print's color and makes the image more permanent by bonding selenium particles directly to the metallic silver in an emulsion.

Mix selenium toner with fresh fixer remover. Note that stains may result if you use fixer remover that has been used for another purpose. Ideally, you should thoroughly wash all prints you plan to tone, regardless of the toner, to avoid unwanted bleaching and staining. But, strictly speaking, a print intended for selenium toning that you have just processed does not have to be fully washed prior to toning. Rinsing the print before placing it in the first fixer tray should be adequate. You can place dry, fully processed prints in the first bath of fixer remover.

Many toners, such as brown toner and selenium toner, give off fumes that are both disagreeable and toxic. To protect your health, always work in a well-ventilated area (or even outdoors!) or purchase a mask with the appropriate filters. And always wear rubber gloves or use tongs when working with toners. To minimize inhalation of the chemical, cover selenium toner trays with a Plexiglas cover when they are not in use. You can add a small amount of Kodak Balanced Alkali to the toner to cut the ammonia smell.

Set Up

It's best to dedicate a set of trays only for toning, and to clean them thoroughly before and after use. Any chemical residue in the trays can cause staining or inconsistent results. To tone with selenium toner, you'll need 3 clean trays:

Tray	Purpose	Contents
1	Pre-soak	Fresh fixer remover
2	Toning bath	Selenium toner mixed with fresh fixer remover (see below for more on dilutions)
3	Holding bath	Running water, if possible

Procedure

Pre-soak the print in fresh fixer remover for 3 to 5 minutes with agitation. The fixer remover helps to remove any residual contaminants from fixing that may interact with the toner to cause unwanted bleaching or staining. Agitate while the print is in the toning bath.

The amount of color depends on the type of paper and developer you use, as well as the dilution and the time in the toning bath. See below for suggested dilutions.

To test the toning of prints made on cold-tone papers, you might want to try times of 5, 10 and 15 minutes in each toner dilution. If your warm-tone paper is responding very rapidly, try shorter times. If you have extra prints, see what effect greatly extended times, such as 30 minutes to 1 hour, have. Longer immersion tends to deepen the values of an image, depending on the paper you are using.

Have an empty tray available for rinsing the print before placing it in the holding bath. After toning, wash the print in an archival washer for 30 minutes.

Place each print in a holding bath until your toning session has ended. Then wash the prints for 20 to 30 minutes in running water. Dry the prints as you normally would.

It's preferable to have running water when toning, but not essential. If you do not have running water, make sure to change the water in the rinse tray every 10 to 15 minutes, and the water in the holding bath every 30 minutes or so. Trace amounts of toner in these baths can cause additional, unwanted toning to occur.

Basic Dilutions

The degree of color change depends on the paper, the dilution of the toner and how long you soak the print in the toning solution. Polytoner has a more immediate and noticeable effect on warm-tone (chlorobromide) papers. Here are recommended dilutions to make 1 liter of working solution:

Selenium toner	Fresh fixer remover	Result
75 ml	1 liter	Moderate toning. Some intensification of shadow areas. Slight increase in contrast
150 ml	1 liter	Stronger toning and greater intensification of shadow areas.

Permanence Only

To tone for permanence without noticeably affecting image color, dilute selenium at 1:20 in fresh fixer remover for 2 to 4 minutes.

Split Toning

Selenium can cause an effect called split toning with chlorobromide papers. Try a strong dilution for an extended time—the toner will produce both colder blue tones in some areas of the paper, and reddish tones in other areas of the paper.

Certain manuals may call for you to heat up the selenium toner to temperatures higher than 80°F in order to make split toning easier. This will enhance split toning, but it also fosters the release of toxic gasses. Unless you are working in conditions of ideal ventilation or with an appropriate mask, do not try this technique.

Disposing of toner

Because selenium toner contains a heavy metal and is toxic, do not dump it down the drain in a home darkroom or other facility without a built-in filtering system until all the metal has been exhausted. Soak an unwanted print in the toner overnight before discarding to remove most traces of the metal before discarding the solution.

Do not mix your own

There are formulas out there for making your own selenium-based toners, but don't ever use them! Selenium is an extremely dangerous substance.