

# silvergrain

## TEKTOL PAPER DEVELOPER PRODUCT INFORMATION SHEET

Silvergrain Tektol Developers are fast-processing, clean working and low toxicity liquid concentrate print developers for b&w print processing. Tektol is suitable for use with all conventional b&w papers in tray, vertical slot processor, drum and other methods of processing. Both developers are designed to be used at a 1+9 dilution under normal room temperature conditions (approximately 20°C/68°F), but may be further diluted to 1+14 when a longer processing time is preferred.

Tektol developer is offered in two variants. **Tektol Standard Developer** is ideal for most applications where the paper's natural image tone is desired. Coldtone paper will be developed to a slightly cooler side of neutral black, while warmtone paper will be on the warmer side of a neutral black hue. **Tektol Neutral Developer** is ideal when a neutral to colder black is desired. Tektol Neutral Developer can also be used to effectively remove an olive or greenish cast in the midtones on papers that have this tendency.

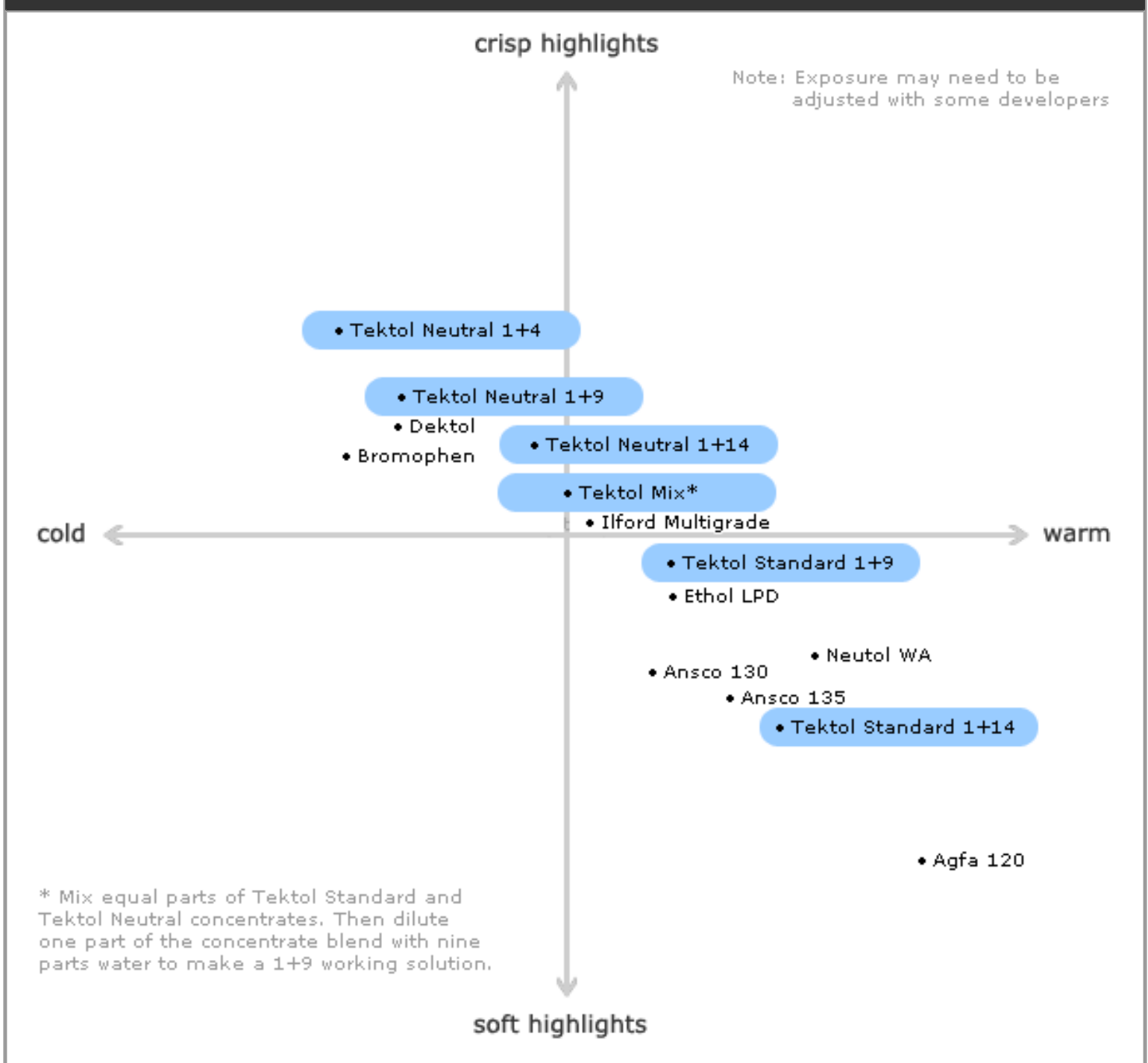
Tektol Standard Developer is especially recommended when the developed prints are intended for toning, as it is optimized to produce the maximum effect of the toner. The combination of Tektol Standard and toners based on sulfur or selenium offers a range of warm black hues, and when properly processed, toned images are permanent. Tektol Neutral Developer is recommended when untuned prints are used for non-archival purposes, or when the maximum range of toning effects is not desired, as is the case when toners are used for archival purposes and a significant shift of the print hue is not desired.

Tektol Standard is a modern print developer, but it may be used in a very similar manner to traditional print developers, such as Kodak Dektol developer, Ilford Multigrade developer, and Ansco 130 developers. Users still benefit from the lower toxicity and excellent image quality provided by Tektol developers.

### Product Substitution Chart

Print Developer	Silvergrain Recommended Replacement
Agfa Multicontrast	Tektol Standard or Neutral
Agfa Neutol NE	Tektol Standard or Neutral
Agfa Neutol WA	Tektol Standard
Ethol LPD	Tektol Standard
Ilford Bromophen	Tektol Standard
Ilford Multigrade Developer	Tektol Standard or Neutral
Ilford PQ Universal	Tektol Neutral
Kodak Dektol (1+1)	Tektol Neutral
Kodak Dektol (1+2 or 1+3)	Tektol Standard
Kodak Polymax T	Tektol Neutral

## Image Tone Guidelines



These are guidelines only and results will vary depending upon paper type, exposure time, dilution and temperature.

### Preparing Tektol developers

Tektol developers are simply diluted with water before use. One part of Tektol Standard Developer or Tektol Neutral Developer is mixed with nine parts of water (1+9 dilution). For slower processing, one part of Tektol Developer is mixed with fourteen parts of water (1+14 dilution).

When the developer is prepared at the 1+9 dilution, the working solution may be stored in a tightly closed bottle between uses, until the processing capacity is reached. However, if prepared at the 1+14 dilution, the developer should be discarded after use.

### **Tray processing**

Both resin coated (RC) and baryta (FB) paper can be processed using a tray method. A developer tray should be filled with a sufficient amount of Tektol developer working solution, prepared as above. Processing temperature may be between 18°C to 27°C, but 20°C to 24°C is recommended. The standard processing time is 60 to 120 seconds, although the processing time may need to be slightly extended if working at a lower temperature.

To process, completely immerse a sheet of exposed paper in the developer working solution. Gently rock the tray from side to side to agitate the solution, but without spilling the developer. The tray should be rocked continuously until the image appears and darkens, taking about 45 to 60 seconds. Thereafter, the agitation may be intermittent, until the development is completed. Recommended development times is 60 to 120 seconds. Note that some papers develop faster than others. Longer development time may be given without changing image contrast, as long as the clarity of highlight is maintained. Typically, RC paper should be developed for 1 minute and FB paper for a 2 minutes or longer.

### **Vertical slot processing**

Developer solution should be prepared at 1+9 dilution with the processing times as above at 20C. For details, follow the manufacturer's instruction.

### **Processing Capacity**

Developer solution may be used repeatedly for 60-100 8x10 prints per liter of working developer at 1+9 dilution, or 30-80 at 1+14 dilution. In reality, the fluid loss due to carryover of the developer solution may be the limiting factor. It is recommended to top up the processing tray with the developer of the same dilution from time to time, to make up for the fluid loss. By using this technique with the 1+9 dilution, the processing capacity of the developer is expanded from the numbers above.

When the developer in an open tray is used slowly, it should maintain its full processing performance for at least 12 hours when using the 1+9 dilution at 20°C. However, higher solution temperature or greater dilution may make the solution deteriorate more quickly. Partially used developer solution may be stored in a tightly stoppered glass or polyethylene bottle, filled to the top, for several weeks.

### **Processing After Development**

Developed prints are immersed in a stop bath, such as dilute acetic acid, for 10 to 30 seconds. If preferred, a developed print may be rinsed by completely immersing in a tray of fresh tap water and agitating continuously for 30 seconds. Prints are then fixed in a fixer solution, and washed in water before drying.

For best results, Silvergrain Clearfix Alkaline fixer is recommended. When processing baryta (FB) paper, it is highly recommended to use a washing aid to shorten the final wash time and save water. Silvergrain Clearwash washing aid is recommended; however, most standard fixers and washing aids from other manufacturers may be used. Refer to the fixer and washing aid product information sheet for details.

### **Advanced Techniques**

Depending on the paper used, the desired image hue may fall somewhere between the hues obtained with Tektol Standard and Tektol Neutral Developers. Both Tektol developers are designed so that they may be mixed at any proportion to obtain an intermediate hue. For example, Tektol Standard and Tektol Neutral may be mixed at a 1:1 or 1:2 ratio to obtain a hue cooler than that obtained with Tektol Standard, but not as cool as the hue obtained with straight Tektol Neutral Developer. This technique may be used with either the 1+9 or 1+14 dilution.

When warmer blacks are desired, Tektol Standard Developer may be diluted 1+19 and 2.0g or more of potassium bromide added to each liter of diluted developer. Print should be exposed slightly longer, and the print should be developed until the desired darkness is obtained. This technique works best with warmtone paper stock. However, when the print is to be toned, it is recommended that the 1+9 or 1+14 dilution be used for best results.

## Storage

Unopened Tektol Developers should be kept in cool, dark conditions. The product has a shelf life of approximately 2 years. Once opened, the concentrate should be used within six months. For best results, large bottles of concentrate should be divided to several small glass or polyethylene bottles filled to the top (developer deteriorates when it is in contact with air, exposed to heat or strong light).

## Availability

Both Tektol Standard Developer and Tektol Neutral Developer are available in bottles of 1 US quart (0.95 liters) and 1 US gallon (3.9 liters).

## Safety Information

Silvergrain Tektol developers are formulated without toxic or harmful chemicals, to minimize the risk in case of accidental exposure or release in the environment. The formula is made with the safest alternative compounds, whenever possible, without compromising the image quality and reliable functionality; however, it is recommended to use all darkroom safety precautions including: wearing an apron, gloves and eye protection. Refer to material safety data sheets for more specific safety information.

Product Safety Chart			
Print Developer	Hydroquinone	Metol	EDTA, DTPA, NTA
Agfa Multicontrast	x		x
Agfa Neutol Plus			x
Agfa Neutol NE	x		x
Agfa Neutol WA	x		x
Ethol LPD	x		
Ilford Bromophen	x		
Ilford Multigrade Developer	x		x
Ilford PQ Universal	x		x
Kodak Dektol	x	x	
Kodak Polymax T	x	x	
<b>Silvergrain Tektol Neutral</b>	<b>NONE</b>	<b>NONE</b>	<b>NONE</b>
<b>Silvergrain Tektol Standard</b>	<b>NONE</b>	<b>NONE</b>	<b>NONE</b>

Red **x** indicates that ingredient is used in the product according to the manufacturer's MSDS (Material Safety Data Sheet). Empty cell indicates that the ingredient is not listed in the manufacturer's MSDS; however, the disclosure may not be complete. The ingredients of Silvergrain products are confirmed with actual production formulae and are indicated as **NONE**.

Tektol Standard and Neutral Developers are free of:

- dihydroxybenzene compounds (commonly used in most photographic developers)
- phosphates
- borates
- known carcinogens
- known mutagens

Tektol developers use a safe developing agent related to Vitamin C, rather than harmful and commonly used dihydroxybenzene compounds (e.g., hydroquinone). Tektol Developers are designed to minimize harmful effects when accidentally released into the environment. When diluted at 1+9, the nominal pH of Tektol developers is 10.4, and the solution contains isoascorbic acid, sodium sulfite, potassium carbonate, and much smaller quantities of Dimezone S, potassium bromide, and other nontoxic proprietary compounds. For more information about the potentially harmful effects of compounds used in photographic chemicals, please visit <http://www.greenphotochemistry.com>

It is strongly recommended that the end user of any chemical solution check with federal, state, and local regulatory bodies to conform with special disposal methods for used solutions to remain in accordance with the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act.

For further information please visit <http://www.digitaltruth.com/silvergrain>

© Digitaltruth Photo Ltd, 2007