SIRCHIE
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TECHNICAL INFORMATION

Hungarian Red

Catalog Nos. LV503, LV5031

INTRODUCTION

Hungarian Red was developed through a cooperative effort of the police forces in Hungary and Holland. The intent was to create a formula that would be highly sensitive to blood residue, and subsequent testing has indicated that Hungarian Red may be more sensitive than other processes such as Amido Black.

Hungarian Red is an aqueous solution for staining impressions found in blood. It is much safer than other staining compounds due to its water-based formula. It has been used in actual crime scenes to recover nearly invisible latent fingerprints and footprints in blood. ***NOTE:*** *As with similar chemicals, collect all DNA evidence from the crime scene before using LV503 because this process will interfere with subsequent blood analysis. Do not use Hungarian Red on handwriting samples, inks, hairs, fibers, and other physiological fluids that will be subsequently subjected to other forms of forensic examination.*

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Hungarian Red may be used on most porous and non-porous surfaces, and resulting prints may be lifted with SIRCHIE's GELifters™. Photograph the impressions before lifting with GELifters™ and then again immediately after making the lift because the residues collected will eventually migrate into the gelatin surface of the lifter.

Lifted traces and weak traces on dark or confusing backgrounds fluoresce under a green alternate light source (520nm-560nm) such as the FAL300 Forensic Alternative Light Source, MMX100 megaMAXX™ and MMX300 megaMAXX™ III. Once fluoresced, view and photograph the evidence with orange or red barrier filters.

PRECAUTIONS

- Before using this kit, consult the appropriate Material Safety Data Sheets (MSDS) found on our website at www.sirchie.com/support.
- Wear protective gloves and safety glasses/goggles.
- This product is generally safe to handle, but avoid contact with eyes.
- Stains produced by this reagent will be difficult to remove.

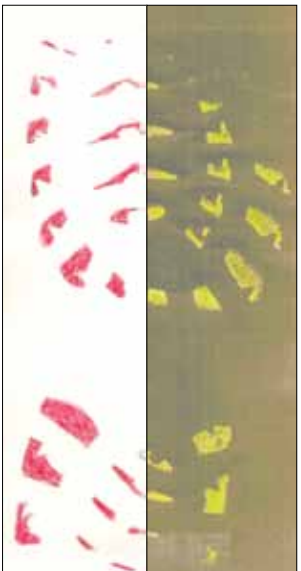
PROCEDURE

Hungarian Red is supplied in sprayer containers. Place small objects in a suitable tray and spray the reagent onto the object from a distance of 6"-9" (15.2cm-22.9cm). Allow about one minute for the dye to set. Then, wash lightly with water or a water/acetic acid mixture. Remove any remaining water droplets with compressed air or a hair dryer set on low heat. The surface must be completely dry before attempting to lift the developed prints. When examining larger objects, apply the reagent directly to the surface.

Lifting

NOTE: *Do not use normal lifting devices such as hinge lifters and tape to lift prints developed with Hungarian Red.* The most effective lifting devices are gelatin-based such as SIRCHIE GELifters™ (available in transparent, white, and black). White GELifters™ provide the best contrast for lifting Hungarian Red developed prints. Be certain to photograph the print immediately after lifting because the lift will eventually migrate into the gelatin causing a loss of detail.

1. Select a lifter of the appropriate size. If necessary, cut a piece to the proper size.
2. Remove the plastic cover from the gel side. Set it aside.
3. Apply the lifter as you would apply lift tape or a rubber lifter. Begin at one end and carefully press the lifter to the surface being certain not to allow air bubbles to form.
4. Allow the GELifter™ to remain on the surface for between 15 and 30 minutes at room temperature.
5. Remove the lifter from the object and examine the gel surface. Do not replace the plastic cover prior to photography. Photograph the lifter using normal photo lighting techniques. You may also use ALS photography to record the lift.
6. The lifted print will be the reverse (mirror image) of the actual latent print.



The left side of this image shows visible red staining from LV503. It fluoresces when excited with 520-560nm (right).

Photographing with Alternate Light Sources

Video and film cameras may not exhibit spectral sensitivity identical to the human eye. Put another way, what you see you may not get. As a consequence, it is difficult to develop hard and fast rules for the use of these instruments in recording fluorescence. It is possible, however, to develop general rules for fluorescence photography.

USE OF LIGHT METERS—Unless you are fortunate enough to have a highly specialized spot meter, you will find that normal hand-held or in-camera light meters are of no use in fluorescence photography. Do not rely on the camera's automatic mode or upon recommendations that its light meter instructions may offer. Use bracketing techniques, and expect exposure times of a half-minute or longer.

STEADY THE CAMERA—Because of the extremely low light levels involved with fluorescence, photography involves long exposures. Mount the camera on a sturdy tripod, and photograph prints in a darkened room.

ILLUMINATION TECHNIQUES—The illumination present must be from the alternate light source producing 520-560nm. Illumination must be as even as possible. "Paint" the light onto the surface being photographed by moving the illumination spot around during exposure. This will tend to even out the illumination over the period of the exposure.

FILL THE FRAME—Fluorescence intensity falls off with distance; therefore, it is important to position the camera as close to the subject as possible while filling the viewfinder frame with the image. If you use a commercial lab for film processing, allow a 20% border around the subject to allow for the lab's cropping of the photos.

USE A BARRIER FILTER—A barrier filter on the camera is necessary for the same reason you needed one for your eyes. If you are using an ALS, equip

the camera with a red or orange barrier filter. We recommend filters specifically designed for use with your camera. Please note that some commercially available filters may fluoresce weakly when exposed to the fluorescence. This will result in hazy or foggy photos. Specify non-fluorescing threaded filters or Cokin®-type orange or red sheet barrier filters available from your local camera distributor.

FILMS—In this application daylight films are superior to specialty films such as tungsten or similar light compensated films. Daylight films generally have red, green, and blue layers of equal sensitivity. Tungsten films are manufactured to be especially sensitive to blue, and they are not suitable for UV photography.

Use the highest speed film you can find. Reduce the effect of graininess by filling the frame and thus reducing the enlargement factor. Use a large format camera for the same reason.

Black and white films are excellent for recording fluorescence due to their high speed and relatively fine grain. A barrier filter is still necessary with black and white film.

APERTURE SETTINGS—The camera's aperture setting controls the size of the opening in the lens iris and thus controls the amount of light reaching the film. When fluorescence is weak you may be tempted to open the aperture as wide as possible to reduce exposure times. But keep in mind that the aperture also controls depth of field or depth of focus. Use of a small aperture means sharpest focus over an extended object. Focus is especially critical when photographing at close range. We recommend using longer exposures and smaller apertures (f/8 to f/22).

RECIPROCITY FAILURE—If you experiment with the relationship between the amount of light present from a scene, the length of time that the camera shutter is open, and the density of the exposure created on film, you will find that for normal photography a simple relationship exists: exposure=light intensity x time. When exposures are long or light intensities are either very low or very high, this relationship fails to hold together. This is known as reciprocity failure. In fluores-

cence photography reciprocity failure results in color shifts and in a general decrease in film speed. Color shifts can be compensated for with color-compensating filters, if necessary (consult photography texts for assistance). You will also find that camera settings no longer scale in a linear fashion, i.e. doubling the aperture size or exposure time does not double the density of the exposure. What all of this leads up to is that fluorescence photography is an art.

Keeping Records

Successful fluorescence photography requires practice, experience, and patience. As you gain experience your judgement of exposure times will improve. The learning curve can be greatly reduced if you record your experiences in a notebook. In your data include the subject being photographed, aperture settings, film used, exposure times, and a copy of the resultant photograph.

Starting Point

The table to the right was developed to provide a starting point for your photographic efforts.

Using Digital Camera Equipment

Digital photography is rapidly replacing the use of film cameras. Among the many advantages digital equipment offers to the law enforcement photographer are:

1. The LCD screen provides instant viewing of the photos taken.
2. Portable digital printers permit quick printouts of photos at the crime scene.
3. All photo records can be stored on a computer and easily accessed.
4. Pricing is now within the range of most agencies.

Digital cameras are used in the same manner as film cameras in that they are available with adjustable settings for ISO/ASA, shutter speeds, and aperture settings. Using the suggested starting points given to the right for film cameras, the evidence photographer can instantly see if the proper settings were used.

FILM SPEED: ASA/ISO400 (Camera-to-Subject Distance=8")		
SUBJECT	APERTURE	TIME
Hungarian Red treated print	f/8	8 sec.
	f/22	30 sec.

We recommend that the digital camera be set up for an ISO/ASA of 100. Most digital cameras offer a range of quality settings. Use the highest quality setting available. For crime scene use, we recommend a high resolution camera.

SIRCHIE offers a complete Digital Evidence Photo System. Instant printouts are available directly from the camera by connecting it to the digital printer with the supplied cable. For more information, please contact the factory.

Notes: