



## Product Evaluation

By: Daniel Sumner

The Fingerprint Committee was requested to prepare an evaluation using a Fingerprint Development process call "Developer" on behalf of IAI member Kenzoh Mashiko from Japan. Mr. Mashiko may be reached by e-mail at *mashiko@onin.com*. The product was tested on June 1, 2002, and an evaluation was prepared. Any questions or comments about the evaluation can be directed to Daniel Sumner at the following e-mail address: *dsumner@mdpd.com* or call (305) 471-2011.

### Product:

Trade name: **'Developer'**  
Reagent: **Ruthenium tetroxide(RuO<sub>4</sub>)**  
and an organic solvent

The supplier of 'DEVELOPER' states in its product information packet that:

1. The DEVELOPER is capable of being applied for the development of latent fingerprints which are deposited on all varieties of substrates, with the exception of those substrates with black porous surfaces.
2. The portability of the DEVELOPER makes it very convenient to use anywhere and it is extremely easy to handle.
3. The DEVELOPER is highly sensitive to latent fingerprints.
4. The DEVELOPER is deep yellow, transparent, non-flammable, and does not dissolve oils.

### Equipment provided:

Fumer: The device is composed of a bubble glass cylinder which has a cap with an air blow nozzle and a pipe for the fumes to exit. The device is used by making bubbles in the solution with an air pump or compressor and blowing the fumes onto the evidence.

### Evaluation:

After reading the directions for the use of DEVELOPER, I performed a series of tests using various porous and nonporous items. After a few practice items to test out the fuming device, I decided on four substrates

to use in this evaluation. The items used were a piece of gray duct tape for the adhesive portion, a piece of white paper, a piece of unfinished wood, and a white plastic jar lid. Two sets of substrates were prepared for use.

The supplier stated that there are three methods for developing latent prints using DEVELOPER: Direct, Indirect, and Liquid. After some experimentation with the Indirect method which required the items to be placed in a plastic bag, filled with the fumes and mixing the fumes by pinching and moving the bag back and forth, I decided that this process was too cumbersome and did not include it in my evaluation.

Using the fuming device supplied was reminiscent of the old iodine process. I adapted the air supply from my fuming hood to mate with the tubing from the fuming device. The jar is filled with the solution and the air creates bubbles and the fumes are expelled through the attached wand. The latent prints developed on the substrates are brownish gray in color.

### WHITE PAPER:

The results were not instant when using the fuming device on paper. At first a smudge appeared and the fumes had to be constantly blown over the apparent smudge until the ridges started to become visible. The time lapse was approximately 90 seconds until the print developed. After the print was developed, I attempted to over develop the latent. I fumed for an additional 90 seconds and saw no change. The second paper substrate was processed using the dipping method. The paper absorbed the solution and prints did develop, however the ridges were not distinct like when using the fuming method. The paper substrate was also discolored.

### DUCT TAPE:

When using the fuming device on the adhesive side of the tape, the results were consistent with the results using the paper substrate. Again a

smudge appeared and had to be fumed until the ridges developed. I was not able to over develop the print with additional fuming. The dipping method returned the same results as fuming on the tape. Only the fingerprint deposit was developed and no staining of the substrate was observed. Both methods returned acceptable results.

### UNFINISHED WOOD:

When using the fuming device on the wood surface, the results were typical of the first two substrates, however the ridge detail did not show the clarity and detail of the paper. The ridges seemed to fade into the wood. Using the dipping method developed prints, although they lacked clarity and detail. The wood also became discolored from the solution.

### WHITE PLASTIC JAR LID:

The plastic lid was processed using both the fuming and the dipping method. Excellent results were obtained on both substrates. Again the fuming method took about 90 seconds, whereas the dipping method returned results immediately. An attempt was made to over develop both substrates and was not possible.

The latent prints developed on the substrates appear to be stable and do not degrade over time. After processing, the substrates were sealed in a box for ninety days and reevaluated. No degradation or fading was evident. The substrates were then placed in an open box and placed on a windowsill and exposed to both natural and artificial light. After ninety days the substrates were reevaluated and no degradation or fading was evident.

### Conclusion:

It appears that this process has merit.

\* The fuming method, however, is not practical for everyday use in searching for latent prints due to the time involved for development and the narrow scope of the fuming device.



\* Some type of fuming chamber should be considered to process several articles at one time.

\* The fuming method could be used on valuable or delicate items. The prints cannot be over developed and the ink on documents is not damaged.

\* The dipping method works well on nonporous items and adhesive surfaces and could be an addition to the fingerprint laboratory.

\* Porous items tend to adsorb the chemical and the item itself changes color, this must be considered before using this process.

*(Daniel Sumner is a Latent Fingerprint Examiner with the Miami-Dade Police Department. Mr. Sumner is the Chairperson for the Fingerprints Committee for the FDIAI.)*

## Photography Contest at the Florida Conference

- ⇒ Contestants must be members in good standing
- ⇒ Photographs can be in color or black & white
- ⇒ Photographs must have been taken within the 12 month period prior to the conference
- ⇒ Photographs must be cleared for publication
- ⇒ Subject matter must be related to law enforcement
- ⇒ Members may submit up to **THREE** Photographs

Photographs must have the name of the photographer, and a brief synopsis of the subject matter, equipment and techniques used.

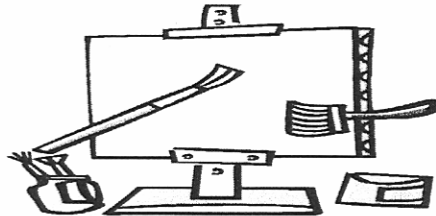
Deadline for entries is 12 noon on November 4, 2002. Entries must be turned into photography contest headquarters at the conference.

Judges will be Phil Sanfilippo, Bill Schade and other members of the Board of Directors. (Anyone with an entry is disqualified from judging.)

Awards: 1st place - Plaque  
Honorable mention - certificate.

### Postmortem Photographs and the Forensic Artist

By: Charlie Holt Jr.



While working the last three years of my law enforcement career as a full time Forensic Artist, I had to opportunity to draw dozens of victims from their postmortem photographs. Ever since I retired, I have donated my time and talent to help the Doe Network identify victims from skeletal remains and from post-mortem photographs. The Doe Network is an organization of dedicated people from all walks life who are involved in recovering missing persons and identifying victims whose remains are presently unidentified. The Doe Network is a non-profit organization and anyone can join and help.

An article about the Doe Network entitled, *Group Seeks Missing Persons in Ranks of Unidentified Dead*, by David Ovalle was published on Monday, August 19th in the Miami Herald.

For more information about the Doe Network, visit their website at [www.doenetwork.org](http://www.doenetwork.org) or you can contact Charlie Holt via e-mail at [choltjr768@aol.com](mailto:choltjr768@aol.com).

*(Charlie retired last year from Miami-Dade PD and now resides with his wife in East Tennessee.)*