

	<p style="text-align: center;"><i>Latent Procedure</i></p> <p>Pitt County Sheriff's Office Forensics Services Unit <i>Issued by Technical Leader</i></p>	<p>Effective Date: 2018/04/01</p>	<p>Ver: 2</p>
<p>Procedure for Basic Yellow</p>			<p>Page #: 1 of 5</p>

Technical Procedure for Basic Yellow

1.0 Purpose – This procedure outlines how to make and apply this process to Evidence Items.

2.0 Scope – This procedure is used in the processing of non-porous evidence that may contain impressions that require developing/enhancing and may also be used in the process of some porous or semi-porous evidence items.

2.1 One of the most effective ways to recover latent prints from items of evidence is to use a Fluorescent dye followed by a laser or alternate light source examination. Basic Yellow is one of the most effective laser dyes for recovering latent prints on various surfaces. This dye is normally used on non-porous surfaces (e.g., metal, glass, plastic, etc.); however, under certain conditions it can be used on porous or semi-porous surfaces. This dye is extremely efficient in that it is highly fluorescent and can be used with various alternate light sources.

3.0 Definitions

- **Alternate light source:** Any of the multiple forensic light sources readily available in the Latent Evidence Section, including, but not limited to, the Crime Scope, Mini-Blue Maxx, and Blue Light Ultra ALS.
- **CE:** Cyanoacrylate ester also known as super glue.

4.0 Equipment and Materials

4.1 Equipment

- Orange filter (goggles and/or camera lens filter)
- Alternate light source
- Fume hood
- Gloves
- Face shield and/or safety goggles
- Plastic applicator bottles or tray for submersion


4.2 Reagents (Alternatively Pre-mixed solutions may be purchased from a commercial Forensic Supplier)

- Basic Yellow (powder)
- Methanol

5.0 Procedure

5.1 Mixing Procedure

All copies of this document are uncontrolled when printed.

	<p style="text-align: center;"><i>Latent Procedure</i></p> <p>Pitt County Sheriff's Office Forensics Services Unit <i>Issued by Technical Leader</i></p>	<p>Effective Date: 2018/04/01</p>	<p>Ver: 2</p>
<p>Procedure for Basic Yellow</p>			<p>Page #: 2 of 5</p>

5.1.1 Place 0.005 gram of Basic Yellow (powder) in five hundred (500) mL of methanol. (To approximate this amount, dampen the tip of an unfolded paperclip with methanol and insert it into the chemical bottle. The powder that adheres to the paperclip can then be transferred into the methanol.)

5.1.2 Thoroughly dissolve the Basic Yellow powder in the methanol. Solution is ready for use.

5.2 Application Procedure

5.2.1 Examiners shall produce a self-made test print to be processed concurrently with items of evidence.

5.2.2 Apply cyanoacrylate ester (According to technical procedure for Cyanoacrylate Ester) to the item of evidence. Basic Yellow adheres to the chlorosis that occurs after processing with Cyanoacrylate.

5.2.3 Non-porous items: Utilizing the fume hood and gloves, spray or completely submerge the item of evidence in the Methanol/Basic Yellow solution. Allow to air dry.

5.2.4 When completely dry, view the item using the Crime Scope or Mini-Blue Maxx. Use goggles to view any fluorescence on the item. Latent prints will fluoresce bright yellow.

Note: Basic Yellow will preferentially adhere to super glued prints, but a certain amount may adhere to the item surface. If too much dye is used, the entire surface will fluoresce and mask the latent print. In this case, rinsing the item with plain methanol will cause the excess dye to wash away and, in most cases, the dye adhering to the latent print will remain.


5.2.5 Porous/semi-porous items: Follow the above directions (in **5.1**) for Basic Yellow preparation, substituting distilled water for the methanol. Apply this substituted preparation as in **5.2**.

Note: Porous/semi-porous items shall be processed with cyanoacrylate ester prior to treatment; however, these items pose a problem when using Basic Yellow as a solution stain. The dye penetrates the pores of the item, causing overall fluorescence. The latent prints will be masked in this instance and rinsing the excess dye is difficult.

5.2.6 Once the item has been sprayed or submerged, it should be rinsed IMMEDIATELY with clear water and scanned with an ALS or Laser.

5.2.7 Any comparison quality developed impressions shall be captured and preserved in accordance with photographic equipment technical procedures, technical procedure for Recording of all Analytical Data and technical procedure for Image Processing.

5.2.8 Camera shall be equipped with an orange filter for print visualization or by placing a Filter plate between subject and camera.

	<p style="text-align: center;"><i>Latent Procedure</i></p> <p>Pitt County Sheriff's Office Forensics Services Unit <i>Issued by Technical Leader</i></p>	<p>Effective Date: 2018/04/01</p>	<p>Ver: 2</p>
<p>Procedure for Basic Yellow</p>			<p>Page #: 3 of 5</p>

5.3 Standards and Controls - N/A

5.4 Calibration - N/A

5.5 Sampling – N/A

5.6 Calculations - N/A

5.7 Uncertainty of Measurement - N/A

6.0 Limitations – Basic Yellow is designed to be used in combination with the Cyanoacrylate Fuming Process and is not generally effective on porous/semi-porous items without the prior treatment of cyanoacrylate.

6.1 Prepared Basic Yellow solution has a shelf life of six (6) months.

6.2 All prepared solution shall be stored in dark, shatter-proof bottles.

7.0 Safety – The safety concerns regarding Basic Yellow have not been thoroughly investigated and there are varied opinions on the associated health effects of this chemical. The chemical solution shall be applied and treated with extreme care until the full effects are known. It may cause irritation when in contact with the eyes or skin and may be harmful if inhaled or ingested. The methanol used in this solution is toxic and flammable and shall be handled with extreme care. Protective gloves, eye goggles and aprons shall be worn at all times.

8.0 References

Journal of Forensic Sciences. Vol. 24, 1: 96-100 (1979).

Kent, T. ed. *Manual of Fingerprint Development Techniques: A Guide to the Selection and Use of Processing for the Development of Latent Fingerprints*. Police Scientific Development Branch, London (July 1992).

Laser Enhancement of Latent Fingerprints. Fingermatrix, Inc., Pender Drive, Suite 310 Fairfax, Virginia, 22030. (March 17, 1988): 1-16.

Lee, H.C. "Methods of Latent Print Development." *Proceedings of the International Forensic Symposium on Latent Prints*. (July 1987): 15 – 24.

Lennard, C.J. and P.A Margot. "Sequencing of Reagents for the Improved Visualization of Latent Fingerprints." *Proceedings of the International Forensic Symposium on Latent Prints*. (July 1987): 141-142.

Manual of Fingerprint Development Techniques. (January 1986): 2-8.

Manual of Fingerprint Development Techniques: A Guide to the Selection and Use of Processes for the Development of Latent Fingerprints. Scientific Research and Development Branch, London (1986).

All copies of this document are uncontrolled when printed.