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|  | <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 Crystal Violet</p> | | | <p>Page #: 1 of 4</p> |

Technical Procedure for Crystal Violet

1.0 Purpose - This procedure outlines how to make the crystal violet solution and apply it to items of evidence.

2.0 Scope – This procedure applies to the adhesive side of tape and can be used to develop impressions on duct tape, masking tape, clear plastic tape, plastic surgical tape, reinforced packing tape, packing labels and black electrical tape. The use of this procedure for the process of black electrical tape is omitted for utility purposes and the examiner or technician shall utilize other procedures available.

3.0 Definitions

- **Master Case File** – All-encompassing documentation stored in RMS, image/data drives and hard case file for case documents, Images, charts and supportive data cross referenced by master case number
- **Alternate light source:** Any of the multiple forensic light sources readily available Latent Evidence Section including, but not limited to, the Crime Scope, Mini-Blue Maxx, and Blue Ultra-Lite ALS.

4.0 Equipment, Materials and Reagents

4.1 Equipment and Materials

- Protective gloves and apron/coat
- Face shield visor and/or safety goggles
- Dark shatter-proof container (one liter)
- Glass processing tray
- Camera/scanner
- Fume hood
- Forceps

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

- Crystal violet crystals (1 gram)


5.0 Distilled Water (1 Liter) Procedure

5.1 Mixing Procedure

5.1.1 Place one liter of distilled water in a dark chemical storage bottle and add one (1) gram of crystal violet.

5.1.2 Shake the container until all crystals have dissolved. Thoroughly shake the container prior to each use.

5.2 Application Procedure – The non-adhesive side of the tape must be processed prior to using Crystal Violet (the use of cyanoacrylate ester and powder processes is acceptable). Forensic Scientists shall

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produce a self-made test print to be processed concurrently with items of evidence. (See Section Technical Procedure for Ensuring Quality Control.)

5.2.1 Duct, Scotch, Packaging Tape and Adhesive Side of Labels:

5.2.1.1 Pour the dyeing solution into a glass processing tray.

5.2.1.2 Soak the tape or label in the dyeing solution for approximately one (1) to two (2) minutes to dye the impressions.

5.2.1.3 Rinse the item with tap water to remove the excess chemicals and allow the item to dry completely prior to proceeding.

5.2.2 Alternate Light Sources Examination:

5.2.2.1 An impression may be weak or may not appear during the above procedures and may be enhanced with the introduction of specialized light from a laser or an alternate light source.

5.2.2.2 This may be accomplished using any standard laser or light source, following the above procedures and viewing the item at various wavelengths until the impression fluoresces (Alternate Light Sources).

5.2.2.3 Preserve the developed impressions through photography, according to the techniques in the Photographic Equipment/Procedures, and/or by electronically recording the impressions (See Image Processing and Recording of All Analytical Data). When photographing clear tapes, ensure that the adhesive side of the tape is facing the camera to record the correct position of the impression. A piece of paper may be placed behind the impression to improve the contrast of the image on clear or transparent tapes. With black electrical tapes, reverse from left to right to record in the correct position. When a laser or alternate light source is utilized, follow normal procedures to record the fluorescent images (See Image Processing and Recording of All Analytical Data)

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 - The process shall not be used outside of a fume hood.

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6.1 The working solutions shall be stored in dark non-breakable plastic containers until needed.

7.0 Safety - Crystal violet is listed as a **carcinogen** in the National Toxicology Program. The Crystal Violet solutions have toxic properties and shall be handled with care. The solutions can be harmful if inhaled or ingested and shall be used in a fume hood when processing evidence or when mixing. Protective gloves, eye goggles and aprons/coats shall be worn as the staining solution will stain clothing and skin. Review the MSDS for detailed information.

8.0 References

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Trozzi, T.A., R.L. Schwartz and M.L. Hollars. *Processing Guide for Developing Latent Prints*. (2000): 1-64.

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9.0 Records – N/A

10.0 Attachment – N/A

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| REVISION HISTORY | | |
|------------------|----------------|---|
| CURRENT VERSION | EFFECTIVE DATE | SUMMARY OF CHANGES |
| 1 | 2016/07/01 | Original Version |
| 2 | 2018/04/01 | Omit section for process of Black Electrical tape and add reference to other procedures for that. Add reference to other procedures as appropriate. Change revision history table, issue date to Effective date and Rev#toVer#. |