	<p 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>
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Technical Procedure for Leucocrystal Violet (LCV)

1.0 Purpose - This procedure outlines how to make the (LCV) solution and apply it to items of evidence.

2.0 Scope - This procedure applies to non-porous items of evidence and some porous items of evidence that may contain bloody impressions that require developing/enhancing.

3.0 Definitions

- **(ALS)Alternate light source:** Any of the multiple forensic light sources readily available in the Digital/Latent Evidence Section including, but not limited to, the CrimeScope, Mini Blue Maxx, Short and Long Wave lamps and Handscope Xenon (spex) ALS. ALS (Alternate Light Source) Equipment used to produce light at various wavelengths to enhance or visualize potential items of evidence.
- **LCV** - Leucocrystal Violet.

4.0 Equipment, Materials and Reagents

4.1 Equipment and Materials

- Lab coats and gloves
- Face shield visor and/or safety goggles
- Fume hood
- Plastic applicators with spouts or glass tray for submerging items
- Processing tray
- Camera/scanner

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

- Leucocrystal Violet (1 g)
- Sodium acetate (3.7 g)
- 5-Sulfosalicylic acid (10 g)
- Hydrogen peroxide (3 %) (500 mL)


5.0 Procedure

5.1 Mixing Procedure – Cyanoacrylate ester fumes may be detrimental to this process. The Leucocrystal Violet crystals shall be white prior to using. If the crystals are yellow, they shall be discarded.

5.1.1 Place ten (10) grams of 5-sulfosalicylic acid in a beaker with a magnetic stirrer.

5.1.2 Add five-hundred (500) ml of 3 % hydrogen peroxide and stir until completely dissolved.

5.1.3 Add 3.7 grams of sodium acetate to the solution with continuous stirring.

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5.1.4 Add one (1) gram of Leucocrystal Violet to the solution with continuous stirring.

5.1.5 Place the solution in a clearly marked dark shatterproof container until needed.

5.2 Application Procedure

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

5.2.2 Using a fume hood and rubber gloves, spray or completely submerge the item of evidence in the LCV solution. Remove test item and allow to completely dry. Spraying with a fine mist is the most effective method to apply the solution.

5.2.3 Development of the impressions will occur in approximately thirty (30) seconds and the area may be blotted with tissue or paper towels to remove excess solution.

5.2.4 If needed to enhance contrast allow test item to dry completely and re-apply the solution to.

Note: This dye will adhere to the bloody impression; however, a certain amount will adhere to the item itself. If the impression over develops or becomes dark, wash the area with distilled water to remove the excess dye. The excess dye will wash away and in most cases the dye adhering to the latent impression will remain. LCV is a catalytic test for blood and will bind with the proteins found in blood which will limit the running or leaching of the developed impression.

5.2.5 Preserve the developed impressions through photography according to techniques in the photographic equipment procedures and/or by electronically recording the impressions (see Section Technical Procedure for Image Processing and Recording of All Analytical Data). The LCV developed impression may be enhanced with the use of a laser or an alternate light source.

Note: When LCV is applied in sunlight or a lighted environment, the impression shall be photographed as soon as possible to avoid unwanted background development.

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 - Avoid the superglue process if LCV will be used on an item of evidence. Serological samples shall be taken prior to treating an item of evidence with LCV.

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- 6.1** Until the health effects are thoroughly investigated, this procedure is not recommended for use on items which may be transferred to other laboratory sections.
- 6.2** Care shall be taken when development occurs with LCV as it is extremely light sensitive.
- 6.3** LCV working solution has a shelf life of ninety (90) days.
- 6.4** The 5-sulfosalicylic acid shall be stored at room temperature until needed. Hydrogen peroxide shall be stored in the chemical refrigerator.
- 7.0 Safety** - Presently, the safety concerns have not been thoroughly investigated in respect to the use of this chemical; however, it shall be applied and treated with extreme care until the full health effects are known. It may cause some irritation if it comes in contact with the eyes or skin and may be harmful if inhaled or ingested. Protective goggles, gloves and aprons shall be worn during processing.

8.0 References

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9.0 Records - N/A

10.0 Attachments - 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	Edit ALS definition, reference additional procedure to be consulted, change revision history, issue to effective date and rev# to ver#.