

# TENNESSEE BUREAU OF INVESTIGATION

## Forensic Services Division

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### Violent Crime Response Team Standard Operating Procedures Leucocrystal Violet (LCV)

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#### 10. VCRT Procedures

#### 10.6 Leucocrystal Violet (LCV)

##### 10.6.1 Scope

Leucocrystal Violet (LCV) is used to enhance visual prints and develop prints deposited in blood. LCV relies on the peroxidase-like activity of hemoglobin in blood to catalyze the oxidation of LCV. LCV is a colorless liquid which turns bluish-purple in the presence of blood.

##### 10.6.2 Definitions

Refer to VCRT 11.0 Definitions and Abbreviations

##### 10.6.3 Chemicals and Reagents

Leucocrystal Violet

###### Mixing Procedure

Hydrogen peroxide 3%	500 ml
5-Sulfosalicylic acid	10 g
Sodium acetate	4.4 g
LCV	1.1 g

Combine 10g of 5-sulfosalicylic acid with 500mL 3% hydrogen peroxide and place into a 500mL bottle. Add and dissolve 4.4 grams sodium acetate. Add and dissolve 1.1 gram of leucocrystal violet.

The working solution should be stored in amber glassware and refrigerated. The working solution will last approximately 3 months. However, a control will be successfully performed prior to use.

##### 10.6.4 Equipment and Supplies

Spray bottle  
Tissues or paper towels  
Dark storage bottles

##### 10.6.5 Test Procedure

The LCV reagent is prepared in advance.  
Spraying is the most effective method of application.

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1. Conduct a positive control using a known bloodstain, these will be prepared in advance. Record the results in notes.
2. Conduct a negative control, free of any blood. Record the results in notes.
3. Spray the area of interest with a fine spray of LCV. Document the results of the control test in the notes.
4. Additional applications of LCV may be used to further enhance the print.

Prints of comparable value shall be marked and photographed using a ruler included in the photograph. Refer to VCRT 10.34 Comparison Photography for further information.

#### **10.6.6 Precautions**

Cyanoacrylate fuming may be detrimental to this process.

#### **10.6.7 Interpretation of Results**

Areas containing blood will turn a bluish-purple color.

Document the results of the controls in the notes.

Record the results of the LCV test in the notes.