3.11.1 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.

3.11.2 Evidence

Any non-porous items, such as glass, plastics, and metals may be sprayed with LCV.

3.11.3 Safety Precautions/Limitations

Gloves, goggles, and a lab coat are recommended.

Spray in fume hood or well-ventilated area.

Cyanoacrylate fuming may be detrimental to this process.

Amido black may be used after LCV to develop additional detail.

3.11.4 Chemicals/Reagents

3% Hydrogen Peroxide
5-Sulfosalicylic Acid
Leucocrystal Violet crystals
Sodium Acetate

3.11.5 Instruments/Equipment

Hydrogen Peroxide bottle for storage
Balance
Weigh boat
Spatula
Beaker
Aerosol Sprayer and Container
Camera
Protective Equipment
Fume Hood

3.11.6 Preparation

Obtain a 473 mL - 500 mL bottle of hydrogen peroxide. Pour some of the hydrogen peroxide out into a beaker. Add 10g sulfocalicylic acid, 1.1g leucocrystal violet crystals, and 4.4g sodium acetate. Pour the hydrogen peroxide from the beaker back into the bottle and invert repeatedly for 3 minutes. Do not shake vigorously.

3.11.7 Storage

Solution should be stored in the hydrogen peroxide bottle or an amber or opaque bottle. Solution should be stored in a cool place such as the hood or a refrigerator.

3.11.8 Shelf Life

Leucocrystal Violet crystals should be discarded if they are a yellow color.

The solution will stay good for up to a month in the hood or up to three months in the refrigerator. If the solution has turned blue or is no longer clear, the old solution should be discarded and a new one should be made.

3.11.9 Controls

One or more bloody prints are placed on a non-porous non-evidence item, such as a plastic bag or microscope slide. The print should be allowed to dry and then LCV is sprayed onto the item.

A positive result is indicated by the presence of visible purple/violet-colored latent prints on the item within 30 seconds.

A negative result is indicated by the absence of visible purple/violet-colored latent prints on the item.

A control must be successfully performed each time LCV is prepared and recorded in the Reagent Logbook.

A control must be successfully performed before LCV is applied to evidence and recorded in the examiner’s notes.

3.11.10 Procedure

1. Photograph evidence prior to processing.
2. Spray the area of interest with a fine spray of LCV. It should be applied to a piece of evidence using an aerosol spray can under the hood or in a well-ventilated area and allowed to dry prior to photography or reapplications if necessary.
3. Additional applications of LCV may be used to further enhance the print(s).

3.11.11 Deviation from Protocol

Any major variation in the above procedure may be performed with supervisor approval.

3.11.12 Interpretation of Results

Latent prints of comparable value shall be marked and photographed with a ruler included. Refer to 2.5.2 and 2.5.5 of the Forensic Imaging Standard Operating Procedures Manual for further instruction.

3.11.13 References

Fischer, J. F. and Trozzi, T. A. Chemical Blood Enhance Techniques Workshop, International Association for Identification Educational conference, July 19-25, 1998, Little Rock, AR