

TENNESSEE BUREAU OF INVESTIGATION

Forensic Services Division



Latent Print Standard Operating Procedures

3.1 Amido Black Methanol

3.1.1 Scope

Amido Black (Naphthol Blue Black) is a protein sensitive dye used to stain blood-contaminated latent prints yielding a blue-black color. This staining process will not develop latent prints deposited in other body secretions.

3.1.2 Evidence

Non-porous surface where latent prints may be deposited in blood can be processed with amido black. Preferably, the surfaces are light enough in color to produce adequate contrast after the staining process. Methanol base should only be used on unpainted surfaces.

3.1.3 Safety Precautions/Limitations

Protective clothing and gloves are needed when using Amido Black. Mixing should be performed in a fume hood or an adequate respirator may be used. Dispose of chemicals properly.

Universal precautions shall be taken when handling items that contain blood.

The Methanol base formula may destroy any painted surface along with any possible latent prints present. Refer to Chapter 3.2 of this manual for the water base formula that can be used on painted surfaces.

Amido black will not develop areas of latent prints in the normal constituents of perspiration.

Cyanoacrylate may inhibit this staining process.

Surfaces bearing blood must be completely dry prior to staining.

Care should be taken to not directly spray the area with bloody friction ridges so potentially fragile blood evidence is not damaged. Instead, the area containing bloody friction ridges should be flooded with amido black that is then allowed to cover the area containing bloody friction ridges.

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3.1.4 Chemicals/Reagents

Naphthol Blue Black
Glacial Acetic Acid
Methanol
Distilled Water

3.1.5 Instruments/Equipment

Balance
Beakers
Graduated Cylinders
Magnetic Stirrer
Stirring Bar or other Stirring Device
Clear or Dark Storage Bottles
Trays
Control slide
Safety Equipment (gloves, lab coat, safety glasses)

3.1.6 Preparation

3.1.6.1 Working Solution

1. Place 1 gram of Naphthol Blue Black in a one liter glass beaker with stirring bar.
2. Add 50 ml of Glacial Acetic Acid and stir.
3. When completely mixed, add 450 ml of Methanol and stir for an additional 30 minutes.
4. Store in properly labeled glass bottle.

3.1.6.2 Glacial Acetic Acid – Methanol Solution

1. Pour 100 ml of Glacial Acetic Acid into a glass storage bottle.
2. Add 900 ml of Methanol.
3. Stir until mixed and label contents.

3.1.6.3 Glacial Acetic Acid – Distilled Water Solution

1. Pour 50 ml Glacial Acetic Acid into a glass storage bottle.
2. Add 950 ml distilled water.
3. Stir until mixed and label contents.

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3.1.6.4 Storage

Clear or dark bottles.

3.1.6.5 Shelf Life

No expiration date is provided for Amido Black and the rinse solutions, however a control will be performed prior to use on evidence.

3.1.7 Controls

Amido Black (Methanol Base) is applied to a glass slide containing a print deposited in blood. (An individual from the laboratory will use a tube of his/her own blood to make multiple slides that will be stored in the Latent Print Unit laboratory area for future use as controls.)

A positive result is the known blood staining a blue-black color.

A negative result occurs when there is a lack of color change with the known blood.

A control must be performed each time amido black is prepared and documented in the Reagent Logbook.

A control must be successfully performed before applying amido black to evidence. This control must be documented in the Reagent Logbook as well as the examiner's notes.

If at any time a control test indicates that a reagent is not working properly, the examiner or technician performing the control will properly dispose of that reagent, make a new reagent, and test a new control. Once the control tests appropriately, the reagent may be used.

In some circumstances of a failed control test it may be necessary to review each component of the reagent/solution to ensure no deficiencies exist in that lot number. If a deficiency is discovered, the preparer will properly dispose of that lot number and document the deficiency and disposal in the Chemical Log. A different lot shall then be used to make the reagent.

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3.1.8 Procedure

Latent prints determined to be of comparable value shall be photographed before amido black is applied. Refer to 2.5.2 and 2.5.5 of the Forensic Imaging Standard Operating Procedures Manual for further instruction.

3.1.8.1 Fix the blood on the evidence

1. Pour enough methanol into a tray to cover the bloodstained areas on the evidence.
2. Soak the stained areas in the methanol for approximately one hour.
3. Cover the tray after immersing the evidence, whenever possible, to prevent evaporation.
4. Properly dispose of the methanol after use.
5. If the methanol soaking process is not possible, heat the stained area with a lamp, heater or oven for approximately one hour. Precautions against the risk of fire should be taken.

3.1.8.2 Application of the working solution

1. Pour enough working solution into a tray to cover the bloodstained areas on the evidence.
2. Soak the stained area in the working solution for approximately two to three minutes or until desired contrast is achieved.

3.1.8.3 First Rinse

1. Pour enough Glacial Acetic Acid – Methanol solution into a tray to cover the bloodstained areas on the evidence.
2. Immerse the bloodstained areas into the solution and gently rock the tray.
3. Leave the bloodstained areas in the rinse solution until desired contrast between the latent and the background is achieved.
4. Properly dispose of solution after using.

3.1.8.4 Second Rinse

1. Pour enough Glacial Acetic Acid – Distilled Water solution into a tray to cover the bloodstained areas on the evidence.
2. Immerse the bloodstained areas in the solution and gently rock the tray approximately 30 seconds.
3. Properly dispose of solution after using.

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3.1.8.5 Drying and Photographing

1. Allow evidence to dry completely at room temperature.
2. Photograph the identifiable latent prints and include a ruler. Refer to 2.5.2 and 2.5.5 of the Forensic Imaging Standard Operating Procedures Manual for further instruction.

3.1.8.6 Deviation from Protocol

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

3.1.9 Interpretation of Results

Latent prints of comparable value shall be marked and photographed with a ruler included.

3.1.10 References

CBDIAI. "Amido Black – Methanol base." Retrieved from <http://www.cbdi.ai.org/Reagents/amidom.html>

Federal Bureau of Investigation. Revised 2000. "Amido Black (Methanol Base)." Processing Guide for Developing Latent Prints. Federal Bureau of Investigation, Washington, D.C., p. 14-15.

Federal Bureau of Investigation. Revised 2001. "Amido Black (Methanol Base)." Processing Guide for Developing Latent Prints. Federal Bureau of Investigation, Washington, D.C., p. 23-25.

Lightning Powder Co. 1998. Technical Notes, Chemical Processing for Latent Prints. Lightning Powder Co., Inc., Salem, Oregon, pp. 4-5.