



**Latent Print Section**

**Amido Black**

Forensic Analysis Division



## 1. Processing evidence using Amido Black

### 1.1 Scope

1.1.1 This document details the procedure for the mixing and using Amido Black on blood contaminated forensic materials by the Latent Print Section of the Houston Forensic Science Center (HFSC).

### 1.2 Equipment, Materials, and Reagents

#### 1.2.1 Methanol Based Amido Black

Solution Name	Reagents	Preparation
Solution A, Developer	<ul style="list-style-type: none"><li>2.0 g Naphthol Blue Black</li><li>250mL Glacial Acetic Acid</li><li>1.8 L Methanol</li></ul>	Combine the ingredients and stir on a magnetic stirrer until all the Naphthol Blue Black is dissolved. This should take approximately 30 minutes.
Solution B, First Rinse	<ul style="list-style-type: none"><li>100mL of Glacial Acetic Acid</li><li>900mL of Methanol</li></ul>	Combine the ingredients and mix manually.
Solution C, Final Rinse	<ul style="list-style-type: none"><li>50mL of Glacial Acetic Acid</li><li>950mL of Distilled Water</li></ul>	Combine the ingredients and mix manually.

#### 1.2.2 Water Based Amido Black

Solution Name	Reagents	Preparation
Solution A	<ul style="list-style-type: none"><li>Pre-mixed Aqueous Amido Black</li></ul>	N/A
Solution B, Rinse Solution	<ul style="list-style-type: none"><li>38 g Citric Acid</li><li>2 L Distilled Water</li></ul>	Combine the ingredients and place on a stirring device until the citric acid is dissolved.

#### 1.2.3 Blood Fixative

Solution Name	Reagents	Preparation
Blood Fixative	<ul style="list-style-type: none"><li>20 g 5-sulfosalicylic acid</li><li>1000 mL Distilled water</li></ul>	Combine the ingredients and stir on a magnetic stirrer until all the 5-sulfosalicylic acid is dissolved.

1.2.4 Equipment: Balances, graduated cylinders, magnetic stirrer and stirring bar, and storage bottles

1.2.5 Safety Equipment: fume hood, safety glasses or goggles, gloves

### 1.3 Limitations

1.3.1 Amido Black is a dye stain which stains proteins found in blood. Amido Black does not react with the normal constituents found in latent print residue; therefore, it must be used in sequence with other processing methods.



- 1.3.2 Prior to processing blood contaminated evidence with **Water Based Amido Black**, it is essential that the blood impression is completely dried or fixed by immersing the item in Blood Fixative Solution.
- 1.3.3 Ensure the substrate is compatible with the formula of Amido Black selected. The methanol-based solution should not be used on painted surfaces as the formula may destroy latent impressions and the surface beneath.

#### **1.4 Safety**

- 1.4.1 Examiners/Technicians shall wear appropriate personal protective equipment (PPE) while preparing and using Amido Black.
- 1.4.2 Fume hood use is required when preparing and applying Amido Black.
- 1.4.3 See applicable Safety Data Sheet (SDS).
- 1.4.4 Place the appropriate safety label and information on all reagent bottles. Proper labeling should include:

- Name of Reagent
- Date of Preparation
- Date of Expiration (if applicable)
- Preparer's name and initials
- Batch Number

#### **1.5 QA/QC**

- 1.5.1 A Quality Control check must be performed before use each day and/or when the reagent is made.
- 1.5.2 To test the solution, apply synthetic blood to a finger and place a test print on a piece of paper or plastic, depending on the substrate being tested (Matrix = synthetic blood; Substrate = paper/plastic). Apply Amido Black as described below.
- 1.5.3 A successful Quality Control Check is one in which a positive test result is achieved. A positive test result is one in which the test print is visible under white light.

#### **1.6 Procedure for Fixing Blood Contaminated Evidence (Water Based Method Only)**

- 1.6.1 Use absorbent paper (tissue paper, paper towels, or filter paper) and a wash bottle containing Blood Fixative Solution (2% solution of the sulfosalicylic acid).
- 1.6.2 Hold a dry piece of the absorbent paper parallel to the surface to be fixed. Begin the fixing procedure by dropping one edge of the paper onto the surface and moisten it heavily with the Blood Fixative Solution so it is anchored in place. Continue moistening the paper, being careful to work out any air bubbles that may be trapped inside.
- 1.6.3 Once the area of interest is covered, leave the saturated paper in place for at least three minutes. For items containing a thick layer of blood, leave the paper in place five minutes or more.
- 1.6.4 Once fixing is complete, remove the paper. Excess fixative can be rinsed away but is not necessary. When blood is relatively fresh, fixing changes its color from dark red to dark brown.



### 1.7 Procedure for Methanol Based Amido Black

- 1.7.1 The application of Amido Black may be applied by dipping, spraying, or by using a squirt bottle.
- 1.7.2 Apply **Solution A** by completely covering the target area. Allow to develop for thirty seconds to one minute. Apply **Solution B (First Rinse)**.
- 1.7.3 Applications of Solutions A & B can be re-applied to develop better contrast.
- 1.7.4 After maximum clarity has been achieved, rinse the evidence with **Solution C (Final Rinse)**.

### 1.8 Procedure for Water Based Amido Black

- 1.8.1 The application of Amido Black may be applied by dipping, spraying, or by using a squirt bottle.
- 1.8.2 Apply **Solution A** and completely cover the target area. Allow to develop for 3 to 5 minutes.
- 1.8.3 After maximum clarity has been achieved, rinse the evidence with **Solution B (Rinse Solution)**.
- 1.8.4 Rinse with distilled or tap water.

### 1.9 Records/Results

- 1.9.1 Processes used are documented in the case examiner's/technician's case notes via the Laboratory Information Management System (LIMS).
- 1.9.2 Reagent test results are recorded in the Latent Print Laboratory Reagent Log.

### 1.10 Storage

- 1.10.1 Store solution(s) in a dark bottle in a refrigerator to enhance shelf life.

### 1.11 References

Defense Forensic Science Center, *CILA LP 53.1, Amido Black*, 07 February 2014

Hussain, J., Pounds, A., "The Enhancement of Marks in Blood Part II. A Modified Amido Black Staining Technique." Central Research and Support Establishment, Home Office Forensic Science Service. CRSE Report No. 685, June 1989

*Processing Guide for Developing Latent Prints*, Federal Bureau of Investigation, USA, 2000.