

Section F - Subsection 2

Coomassie Blue

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Name of Procedure:

Coomassie Blue

Suggested Uses:

Coomassie Blue is used to enhance bloody impressions on porous and nonporous items of evidence. This process is blood sensitive to the proteins and palmar sweat found in blood and does not require a fixing technique to stabilize the impression. This procedure may also be utilized in the processing of the adhesive sides of tapes.

Equipment Needed to Perform Procedures:

A - Rubber apron and rubber gloves

B - Face shield visor and/or safety goggles

C - Magnetic stirrer, magnetic follower and magnetic retriever

D - Two (2) glass beakers

F - Application Equipment

1. Two (2) spray bottles
2. Two (2) glass trays

G - Camera (35 mm, 2 1/4, MP-4, CU5, TC III)

H - Fume hoods

Chemicals Needed For Preparation of Chemical Solution(s):

A - 0.44 g of Coomassie Brilliant Blue (R250)

B - Forty (40) ml of Glacial Acetic Acid

C - Two-Hundred (200) ml of Methanol

D - Two-Hundred (200) ml of Distilled water

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Formula/Directions for Preparation of Chemical Solution(s):

Staining Solution (Developer):

1. Place .44 g of Coomassie Brilliant Blue and two-hundred (200) ml of methanol in a large glass beaker with magnetic stirrer and stir.
2. Add forty (40) ml of glacial acetic acid and two-hundred (200) ml of distilled water to the solution with continual stirring to ensure the solution is thoroughly mixed.
3. Place the solution in a clearly marked spray bottle or dark container until needed.

Destaining Solution (Rinse Solution):

1. Place forty (40) ml of glacial acetic acid and two-hundred (200) ml of methanol in a large beaker with a magnetic stirrer and stir.
2. Add two-hundred (200) ml of distilled water to the solution with continual stirring to ensure the solution is thoroughly mixed.
3. Place the solution in a clearly marked spray bottle or dark jug until needed.

Processing Procedures for Application to Item(s) of Evidence:

Spray Method:

1. Spray the item with a sufficient amount of the staining solution to completely cover the area of interest.
2. Spray the item with the destaining solution to clear the background. The destaining solution should be used generously to remove the excess staining solution.
3. Allow the item to completely air-dry prior to proceeding.

Immersion Method:

1. Place a sufficient amount of the staining solution in a tray to completely immerse the item for approximately thirty (30) to ninety (90) seconds.
2. Remove the item from the staining solution and place in a separate tray of destaining

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solution for approximately one minute and agitate to clear the background. This procedure may be repeated with a fresh Destaining solution if the background is not completely clear.

3. Remove the item from the solution and allow to completely air-dry prior to proceeding.

Steps to Preserve Developed Impressions:

The most appropriate methods to preserve developed impressions is through photography, using the proper techniques (See Photographic Equipment/Procedures) and/or electronically recording the impressions (See Image Processing). The impression may be lifted directly from the item; however, this is not recommended until the item is completely dry.

Safety Concerns:

Presently there are no major safety concerns associated with the use of this technique. Glacial acetic acid and methanol can be harmful if inhaled or ingested and should always be used in a fume hood when mixing and/or processing evidence. Protective gloves, eye goggles and aprons should be worn at all times as the staining solution will stain clothing and skin.

This technique may be used at crime scenes; however, only use in a well vented area or utilize a fan to remove the fumes produced.

Storage and Location of Chemicals and Solutions:

The Coomassie Blue reagent should be stored in the original shipping container until needed.

The staining and destaining solutions may be stored in clear spray bottle or dark containers until needed.

Shelf Life:

Indefinite - both solutions and powder.

Other Information:

Larger amounts of Coomassie Blue may be mixed for large items or use at crime scenes.

The staining solutions should be discarded after each usage. The destaining solution may be used a number of times to process evidence; however, if the solution appears to be contaminated it

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should be discarded. The containers should be clearly marked to avoid contamination of the solutions.