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## TECHNICAL INFORMATION

### Amido Black Catalog Nos. LV501, LV5011

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#### INTRODUCTION

Amido Black is a biological dye that stains the protein present in blood and some other body fluids producing a dark blue-black image. It is extremely useful in developing latent fingerprints contaminated with blood, but it will not successfully develop a normal perspiration-based print.

It should be used only after all other physiological samples have been gathered (semen, saliva, urine, blood for typing, etc.), and only after all other fingerprint development methods have been attempted. Amido Black can interfere with examinations of handwriting, inks, paper, and indented writing as well as fiber, hair, paint, and similar evidence. Photograph any visible prints/impressions before application.

Amido Black can be used on almost any surface, porous and non-porous; however, some porous surfaces will produce a high background color. It can be used on the skin of corpses, but it should not be used on live skin. The methanol-based formula is highly flammable and toxic, and it can damage some surfaces. Therefore, it is suggested that the water-based formula be used in the field whenever practical. Amido Black is available in a powder and a pre-mixed concentrate.



## PRECAUTIONS

- Before using this product, consult the appropriate Material Safety Data Sheets (MSDS) found on our website at [www.sirchie.com/support](http://www.sirchie.com/support).
- Wear protective gloves and clothing, including protective eyewear when preparing or using Amido Black.
- Amido Black is toxic and should be mixed in a fuming hood or with an appropriate respirator.
- Use with adequate ventilation. If ventilation is inadequate, wear a facemask equipped with organic vapor cartridges.
- Extinguish all smoking materials and open flames before use.

## SOLUTIONS

### Field Solutions

*To Create A Field Working Solution (makes 4000ml):*

1. Place 15g of Amido Black powder into a suitably sized container.
2. Carefully add 400ml of glacial acetic acid.
3. Stir until the Amido Black has completely dissolved. Use of a magnetic stirrer is highly recommended.
4. Pour 3600ml of methanol into a suitably sized container. Add the Amido Black/acetic acid mixture from Step 3 above. Stir for a minimum of 30 minutes.
5. Transfer solution to clean container(s) and cap tightly.
6. Label container with substance name “Amido Black Working Solution” and the date it was mixed. (*Working solution will keep indefinitely.*)

*To Create A First Rinse Solution (makes 4000ml):*

1. Carefully pour 400ml of glacial acetic acid into a suitably sized container.
2. Add 3600ml of methanol. Stir with a plastic stirring rod. A colorless solution is produced.

3. Transfer solution to clean container(s) and cap tightly.
4. Label container with the substance name (acetic acid/methanol rinse solution) and the date it was mixed.  
*(Rinse solution will keep indefinitely.)*

*To Create A Final Rinse Solution (makes 1000ml):*

1. Carefully add 50ml of glacial acetic acid to 950ml of distilled water in a suitably sized container. Stir until mixed.
2. Transfer solution to clean glass storage bottle.

### **Aqueous Solutions—Field or Lab Use**

*To Create an Aqueous Fixing Solution—Solution No. 1 (makes 1000ml):*

1. Weigh out 20g of 5-Sulphosalicylic Acid. Place in a clean, dry, 2 liter glass beaker.
2. Measure out 1-liter of Distilled Water. Add to the 5-Sulphosalicylic Acid while stirring with a magnetic stirrer. A clear water-based Fixing Solution will be produced
3. Transfer the water-based Fixing Solution to a clean, dry, labeled 1 liter plastic coated glass bottle equipped with a tightly fitting screw cap. *(Unused water-based Fixing Solution will keep indefinitely.)*

*To Create An Aqueous Working Solution—Solution No. 2 (makes 1000ml):*

1. Weigh out 2g of Amido Black. Place in a clean, dry, 2 liter glass beaker.
2. Weigh out 20g of citric acid. Add to the Amido Black.
3. Measure out 1 liter of distilled water. Add to the beaker. Stir with a magnetic stirrer for at least 30 minutes. A blue-black working solution will be produced.
4. Transfer the water-based Working Solution to a clean, dry, labeled 1 liter plastic coated, glass bottle with a tightly fitting screw cap. *(Unused water-based Working Solution will keep indefinitely.)*

*To Create A Laboratory First Rinse Solution (makes 1000ml):*

1. Carefully pour 100ml of glacial acetic acid into a 2-liter beaker.
2. Add 900ml of methanol. Stir with a plastic stirring rod. A colorless solution is produced.
3. Transfer solution to a clean container and cap tightly.
4. Label container with the substance name (acetic acid/methanol rinse solution) and the date it was mixed.  
*(Rinse solution will keep indefinitely.)*

## **PROCEDURE**

### Methanol Solutions

#### *General Considerations*

Remember that Amido Black will not develop latent prints or impressions that are not contaminated with blood. Use Amido Black only where blood is visible, and use other standard methods to detect prints not displaying blood. Careful application of powers and ninhydrin should not prevent the use of Amido Black. However, cyanoacrylate methods have been found to severely diminish Amido Black's usefulness. Physical developer and powders may be used following the application of Amido Black. **NOTE:** *All physiological samples such as semen, saliva, urine, and blood for typing must be taken before the use of Amido Black.* Additionally, because it is a dye, Amido Black can interfere with questioned document examinations of handwriting, inks, papers, and indented writing as well as fiber, hair, paint and similar evidence. Therefore, photograph any visible prints/impressions before beginning application.

#### Immersion Method

1. **STABILIZE THE BLOOD PROTEINS**—Whenever possible stabilize or fix blood to the item of evidence by immersing in methanol. Submerge each item in a covered container for approximately one hour. Replace methanol as it becomes contaminated. **NOTE:** *Some items may require several changes.* Drain methanol and hold for proper disposal. If stabilization in methanol is not possible, heat stabilization can be used. Use a lamp or similar heat source to warm the suspected area for a period of one hour prior to the use of Amido Black.

- 2. DEVELOP THE BLOOD PROTEINS**—Prepare three containers of sufficient volume to submerge the item of evidence. In the first container, place an appropriate volume of working solution. In the second, place a similar volume of first rinse, and in the third place Acetic Acid/Distilled Water Final Rinse. Submerge each item in the working solution until prints turn black. This will take two to three minutes. Replenish the solution as necessary. Collect heavily contaminated working solution for proper disposal.
- 3. CLEAR THE BACKGROUND**—Immerse the items in the first rinse solution. Gently rock the solution to remove excess working solution dye from the background. Change rinse, if necessary, due to heavy dye contamination. Collect used rinse for disposal after each use.
- 4. FINAL RINSE**—Transfer the items to the acetic acid/distilled water rinse. Gently rock the solution to aid in rinsing. Change rinse, if necessary, due to heavy dye contamination. Collect used rinse for disposal after each use.
- 5. Allow items to AIR DRY** at room temperature.
- 6. PHOTOGRAPH any useful prints**—The development process can be repeated to enhance development. Photograph any prints or impressions after each development cycle.

### Field Spray Methods

It is often not possible to follow laboratory protocols in the field. Highly successful spray methods have been field tested and reported by some agencies. This technique involves the use of only two solutions. The solutions can be used on virtually any surface and on the epidermis of deceased subjects. With some effort skin can be cleaned following the process by using a 10% bleach/water solution. **Do not use on live skin.** When treating porous surfaces, dilute the working solution with four to five parts rinse solution to each part working solution before application. *All physiological samples such as semen, saliva, urine, and blood for typing must be taken before the use of Amido Black.* The area or item to be treated should be dry.

1. Spray the suspect surface of the specimen with a saturating mist or working solution. Prints or impressions will appear rapidly. All areas adjacent to visible stains should be sprayed thoroughly as well since development of blood prints/impressions not visible to the naked eye is probable.

2. Spray developed areas with the rinse solution until the background is sufficiently cleared.
3. Photograph any useful prints.
4. As necessary, repeat the development/rinse process to enhance development or until no further development occurs.
5. Photograph any prints or impressions after each development cycle.
6. Occasionally staining can be cleaned using a solution of 10% bleach.

### Aqueous Solutions

Photographs of any visible fingerprints must be taken before proceeding. **IMPORTANT NOTE:** *Before using this technique on a corpse, clear the procedure with the Coroner's or Medical Examiner's Office.*

1. Pour sufficient water-based fixing solution to treat the article into a clean, dry, metal dish or pan.
2. Immerse the article in the fixing solution for five to six minutes. Longer times may be needed to fix heavy blood deposits. Beware of cross-contamination of DNA evidence if more than one article is processed. Discard the water-based fixing solution.
3. Pour sufficient water-based working solution into a clean, dry, metal dish or pan to treat the article. Pour a similar volume of distilled water into two other containers. If the article cannot be fully immersed, apply the working solution and distilled water using a wash bottle above the fingerprints, and allow the solutions to run down over the prints.
4. Immerse the article in the working solution for three to four minutes. Working solution may be replenished as needed. Discard used working solution when complete.
5. Immerse the article in distilled water. Rock the dish gently until excess dye has been removed from the background and greatest contrast is achieved between the fingerprints and the background.
6. Allow the article to dry at room temperature.
7. Photograph useful fingerprints.

## Photography

Both color and black-and-white films have been used successfully with Amido Black, but color is the preferred alternative. It is important to photograph developed evidence before each enhancement procedure so that evidence is preserved from accidental destruction. Include a scale in all photographs.

- **Use of Light Meter**—Hold your camera/light meter as close to the subject area as practical to make the exposure measurement. This will help prevent errors due to bright spots in the field of view. Use bracketing techniques.
- **Illumination Techniques**—Natural diffused lighting or flash can be used. Be aware of color shifts caused by incandescent (tungsten) lights and especially by fluorescent lighting. Use compensating filters or films accordingly.
- **Fill The Frame**—Position your camera as close as possible to the subject consistent with content requirements. **NOTE:** *If you use a commercial photo lab, leave a 20% border since these labs routinely crop prints (see print shown right).*
- **Film**—Use the highest film speed you can obtain. Reduce graininess by filling the frame and thus reduce the need for enlargement as well. Use a large format camera for the same reasons.
- **Aperture Settings**—Your aperture setting controls the size of the opening in the camera iris and limits the amount of light entering the camera, but the aperture is also your means of controlling depth of field or depth of focus. Using a small aperture means the sharpest focus over the entire object. At close range use longer exposures and smaller apertures ( $f/8$  to  $f/22$ ). Use a tripod if available.

### *Using Digital Camera Equipment*

Digital photography is rapidly replacing the use of film cameras. Among the many advantages digital equipment offers to the law enforcement photographer are:

1. The LCD screen provides instant viewing of the photos taken.
2. Portable digital printers permit quick printouts of photos at the crime scene.

3. All photo records can be stored on a computer and easily accessed.
4. Pricing is now within the range of most agencies.

Digital cameras are used in the same manner as film cameras in that they are available with adjustable settings for ISO/ASA, shutter speeds, and aperture settings. Use available light or electronic flash.

We recommend that the digital camera be set up for an ISO/ASA of 100. Most digital cameras offer a range of quality settings. Use the highest quality setting available. For crime scene use we recommend a camera with a high resolution.

SIRCHIE offers a complete Canon Digital Camera outfit. Instant printouts are available directly from the Canon Power Shot Camera by connecting the camera and the digital printer with the supplied cable. For more information, please contact the factory.



*Photo shown actual size.*