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Introduction

This document provides work instructions for latent print processing, latent databases and DNA sampling. Abbreviations used in this manual and their meanings are listed in the Latent Print Discipline Manual.

This manual describes the use and safety considerations for the different processing techniques used in the Latent Print Discipline.

This manual contains preparation instructions for chemicals prepared in-house. Exact measurements and proportions when preparing chemical solutions are desirable for consistent quality, but successful results in developing latent fingerprints are not dependent upon unequivocal accuracy. There is considerable latitude in preparing chemical solutions for latent fingerprint techniques without adversely affecting the successful development of latent prints.

For latent print evidence processing, chemicals are decanted into “day use” containers. These “day use” containers are emptied at the end of each day.

AMIDO BLACK

Description of Process

Amido Black, also known as napthol blue-black, is used to develop or enhance latent prints that have been left in blood. Amido Black stains the proteins in the blood turning the print a dark blue or black color. This is not the only blood print development technique available.

Amido Black may destroy blood for serology/DNA testing. Have evidentiary blood samples chemically tested and preserved by appropriate personnel prior to processing. It will not develop prints in perspiration, fats and oils, or salts. The background of a porous item may also stain, causing weak bloody prints to not be detected.

Cyanoacrylate ester fuming may be detrimental to this process.

Sequence

Amido Black is typically utilized instead of other processes (cyanoacrylate ester fuming, powders, etc.). Although a light application of cyanoacrylate ester fuming may be applied previous to Amido Black application to preserve latent prints not in apparent blood.

Process for Use

Amido Black is typically prepared in the laboratory and not purchased as a working solution. Shelf life is indefinite for Amido Black and Rinse Solution.

1. Preserve any suitable visible prints present on evidence prior to applying Amido Black solutions.

2. Apply the Amido Black base solution by dipping, spraying, or using a squirt bottle to dried prints in apparent blood. Apply until the entire print has turned from a reddish-brown color to a blue-black color. Background staining may occur.

3. If necessary, the base solution can be re-applied before the final rinse to achieve sufficient clarity.

4. Rinse off excess base solution with the rinse solution (use additional rinses as necessary to achieve sufficient clarity).

5. Let dry.

6. Examine the item for latent prints and indicate the latent with suitable markings as appropriate to be preserved by digital imaging/photography.

Note: Developed latent prints on some dark-colored surfaces may be viewed with a light source for increased contrast.

AMIDO BLACK

Instructions for the preparation of

Amido Black Developer (Methanol based)

Makes 1000 mL

Chemicals needed	Amount
Amido Black Powder	2 g
Methanol	900 mL
Glacial Acetic Acid	100 mL

INSTRUCTIONS

Combine the chemicals listed above and mix on a stirring device until all the Amido Black Powder is disolved.
This should take approximately 30 minutes

Shelf life is indefinite

Source: Chemical Formulas and Processing Guide for Developing Latent Prints (Revised 1994)
U.S. Department of Justice, Federal Bureau of Investigation
Laboratory Division, Latent Fingerprint Section

Instructions for the preparation of

Amido Black Rinse (Methanol based)

Makes 2000 mL

Chemicals needed	Amount
Methanol	1800 mL
Glacial Acetic Acid	200 mL

INSTRUCTIONS

Combine the chemicals listed above.
The Amido Black Rinse can be mixed manually

Shelf life is indefinite

Source: Chemical Formulas and Processing Guide for Developing Latent Prints (Revised 1994)
U.S. Department of Justice, Federal Bureau of Investigation
Laboratory Division, Latent Fingerprint Section

AMIDO BLACK

Control Testing

Reactionary substance: synthetic blood (Sirchie catalog No. SYNB8) on glass slide

Positive results – purple, blue, black color change

Negative results – no color change

Safety

Mix only in a vent hood.

When mixing or using, must wear gloves and eye protection.

Chemicals are flammable and skin irritant.

Caution should always be exercised around a bloody crime scene or handling items which contain blood.

Excess is disposed of as any flammable liquid.

Protective lab coats, footwear, eyewear, and latex gloves should be worn.

Since Amido Black is mixed with methanol, which is highly flammable extreme caution should be taken when used at a crime scene.

CYANOACRYLATE

Description of Process

The super glue process was first used for latent print development by the Japanese police in the late 1970s. A glue containing cyanoacrylate is placed in an airtight chamber with the evidence. As the glue dries, the fumes from the drying glue circulate throughout the chamber adhering to the latent print residue left on the evidence. The process will develop fresh as well as old prints.

Sequence

Cyanoacrylate Ester Fuming is typically utilized after a visual examination and before the utilization and application of other processes (ex: Powder Processing and/or Fluorescent Dye Staining). Cyanoacrylate Ester Fuming may interfere with DNA analysis and latent print blood enhancement techniques (such as Amido Black processing).

Process for Use

Cyanoacrylate is purchased as a working solution. Shelf life is indefinite for this purchased product.

1. Place aluminum dish on a heating device and pour approximately one (1) teaspoon of glue in the dish. May use more or less glue depending on evidence being processed.
2. May add accelerator (ex: water), if required. Manufacturer recommends optimum humidity of 30-60%.
3. Place evidence into fuming chamber either by suspending or standing so all areas are exposed.
4. Seal fuming chamber.
5. Turn on heating device. Manufacturer recommends operation at 60º-85º F (16º-29º C) and not to heat above 250º F (120º C).
6. After latent print(s) are developed (usually 8 to 30 minutes), turn the heater off and exhaust the fumes from chamber before opening. May process item longer with superglue, as needed, for adequate clarity of results.
7. Vent chamber (usually 10 or more minutes).
8. Remove evidence and view for developed latent prints. Oblique and/or intense light may be utilized to better visualize developed latent prints.
9. If suitable latent prints are developed, the examiner may indicate the latent print with suitable markings as appropriate to be preserved by digital imaging/photography.
10. Depending on type of evidence, additional processing techniques for development of latent prints may be used (ex: Powder Processing and/or Fluorescent Dye Staining).

CYANOACRYLATE

ControlTesting

Reactionary substance: Impression made with a thin layer of lard on a glass slide.

Positive results – white film similar to performance check glass slide for that instrument

Negative results – lack of white film

Safety

Precautions should be taken as to not get the glue on your skin. Wear eye protection and latex gloves. If you do get glue on your skin and get attached to something, do not try to pull apart. Use water or acetone and then rub apart to release. Use in a vent hood or use an exhaust system to remove fumes from the chamber prior to opening the fuming chamber and removing the evidence. Cyanoacrylate ester fuming may be a respiratory and eye irritant.

IND (1,2-INDANEDIONE)

Description of Process

1,2-Indanedione is a fluorescent amino acid reagent applied for developing latent prints on porous surfaces such as paper and cardboard. There is no discoloration or background staining evident on the 1,2-Indanedione processed samples that consistently appears when processing with DFO. 1,2-Indanedione may be used in place of DFO.

Sequence

If other processes are to be used on the same piece of evidence, IND should be used prior to DFO, Ninhydrin and Physical Developer.

Process for Use

IND crystals are purchased and a working solution is prepared in the laboratory.

1. Apply the IND solution to an item by spraying, dipping or brushing.

2. Allow to dry for approximately three minutes.

3. After the IND has dried, place the processed item in a humidity chamber to accelerate the development process.

4. 10 minutes at 100 C and 60% relative humidity.

5. The best results obtained for the thermal paper samples were achieved by not accelerating the development and allowing them to develop naturally in the laboratory environment from 4 to 12 hours.

6. Developed prints are observed through an orange/amber viewing filter using a light source.

7. Examine the item for latent prints and indicate the latent with suitable markings as appropriate to be preserved by photography.

8. The results can also be seen on some samples with white light and develop as a light pale pink color.

IND (1,2-INDANEDIONE)

Zinc Chloride Stock Solution

Makes 1000 mL

Chemicals needed	Amount
Zinc Chloride crystals	40 g
Ethyl Acetate	1000 mL

INSTRUCTIONS

Add the chemicals listed above in the order listed above to a beaker.
Mix on a stirring device until all the zinc chloride crystals are dissolved.

Note: All IND solutions should be kept in dark, tightly sealed bottles away from direct light
If stored properly, shelf life is one year.

References:

Finger Tips: Processing Thermal Paper with 1,2-Indanedione/Zinc Chloride-A Novel Technique.
Lawrence Parasram. Identification Canada. March 2011

Indanedione-Zinc Chloride reagent for development of latent fingermarks on paper.
Australian Federal Police. September 2008

1,2-Indanedione Stock Solution

Makes 1000 mL

Chemicals needed	Amount
1,2-Indanedione crystals	4.6 g
Ethyl Acetate	960 mL
Glacial Acetic Acid	40 mL

INSTRUCTIONS

Add the chemicals listed above in the order listed above to a beaker.
Mix on a stirring device until all the crystals are dissolved.

Note: All IND solutions should be kept in dark, tightly sealed bottles away from direct light
If stored properly, shelf life is one year.

References:

Finger Tips: Processing Thermal Paper with 1,2-Indanedione/Zinc Chloride-A Novel Technique.
Lawrence Parasram. Identification Canada. March 2011

Indanedione-Zinc Chloride reagent for development of latent fingermarks on paper.
Australian Federal Police. September 2008

IND (1,2-INDANEDIONE)

1,2-Indanedione Working Solution

Makes 2000 mL [+ 8 mL Zinc Chloride Stock Solution]

Chemicals needed	Amount
1,2-Indanedione Stock Solution	260 mL
Petroleum Ether	740 mL
Zinc Chloride Stock Solution	8 mL

INSTRUCTIONS
Add the chemicals listed above in the order listed above to a beaker. Stir.

Note: All IND solutions should be kept in dark, tightly sealed bottles away from direct light
If stored properly, shelf life is one year.

References:

Finger Tips: Processing Thermal Paper with 1,2-Indanedione/Zinc Chloride-A Novel Technique.
Lawrence Parasram. Identification Canada. March 2011

Indanedione-Zinc Chloride reagent for development of latent fingermarks on paper.
Australian Federal Police. September 2008

Control Testing

Reactionary substance: natural sweat on porous white paper

Positive results – (visual; optional) light/pale pink color; (ALS/lasers) fluorescence (orange due to filters)

Negative results – (visual) no color change; (ALS/Lasers) no fluorescence

Safety

Chemicals used in preparation and process are flammable and irritant. Avoid contact with skin and eyes. Wear proper protective equipment when preparing and processing items: lab coat, gloves, and safety glasses (goggles). Wear amber protective eye wear when viewing results under laser light.

POWDERS - PLAIN

Description of Process

Black powder is one of the oldest and most basic methods of developing latent prints on non-porous surfaces. Powder is applied to a surface by lightly dusting over the surface with a soft bristle type brush or duster. Once prints are developed they should be preserved for later comparison by either photography and/or lifted with lifting tape and placed on a lift card. Black powder is not the only color available; however, it is the most commonly used type of powder (even on dark colored surfaces).

In addition, there are fluorescent powders that may be used, which require the use of an alternate light source and appropriate filters. It is not typical to see fluorescent powders in casework. However, an analyst must be alert when visually inspecting lift cards submitted to the laboratory. Fluorescent powders are bright green, red, yellow, orange, etc., but can be very faint and easily overlooked. This is especially the case for fluorescent powders on black backgrounds. If you see <u>any</u> indication of colored powder (not black, white or gray), it is strongly recommended that the lift card be examined with the appropriate light wavelength and filters for fluorescent powders.

Sequence

Powder Processing can be used at the Forensic Scientist or Technician's discretion. It should not be used on porous items such as checks, cardboard, paper sacks, etc. A chemical process would be best suited for these types of evidence; however, if the paper or cardboard has a shiny or slick surface (such as magazine covers or matchbook covers) it could be used.

Safety

Powder can easily be inhaled. Wear a facemask to filter out loose powder in the air or dust in a fume hood. Wearing gloves will prevent you from getting your hands dirty; however once lifting tape is placed over the developed latent; gloves make it difficult to rub out air bubbles.

POWDERS – PLAIN

Process for Use

All powder is purchased and not prepared in the laboratory.

1. Prior to applying the powder to the surface that is to be processed, view the item for prints that are visible to the eye; such as prints in blood, grease, or any foreign residue. If there are visible latent, patent, or plastic prints:

   a) Do not handle the evidence excessively since the item has not yet been processed.

   b) Consider alternative processing techniques for prints in blood, grease, or any foreign residue.

2. Take the jar of powder and tap the jar into the palm of the hand several times to break up clogs of powder and loosen the powder that has settled.

3. Pour a small amount of powder (two to three tablespoons) into a container.

4. Choose a type of brush to apply powder.

   a) Fiberglass or nylon – to be used on small or large objects.

   b) Feather duster – for larger objects.

   c) Short bristle brush – for small objects and also used for cleaning up latent prints by lightly brushing in the direction of ridge flow.

5. Hold fiberglass brush, nylon brush, or feather duster between palms of your hands, rub hands back and forth several times to loosen and fluff out bristles or feathers.

   a) Dip the brush into the container of powder lightly to pick the powder up.

   b) Tap the brush several times with your index finger over container to release excess powder.

6. Apply the powder to the surface by lightly dusting over the surface (only the tips of bristles or feathers should touch the surface).

   a) Twirling motion – fiberglass brush

   b) Back and forth motion – fiberglass, feather duster, or short bristle brush

   c) Figure eight type motion – feather duster

   d) Once a latent is visible, view the latent and then apply a few more strokes of powder. If the latent starts to lighten up or starts looking spotty – stop processing. The latent is at its maximum contrast. Additional processing will destroy or deteriorate the latent.

7. Remove the excess powder from the processed item.

   a) Tap item lightly on counter.

   b) Use short bristle brush (brushing with the flow of ridges).

   c) Make multiple lifts of the same print.

8. Preserve the latent print for later comparison by either digital imaging/photography or a lifting technique appropriate to the evidence.

POWDERS – MAGNETIC

Description of Process

With magnetic powder, there is no brush with fibers or bristles to hold the powder. The powder is actually made up of finely ground metal shavings with colored powder. The powder is applied with a metal rod or wand that has a magnet inside that attracts the powder-like whiskers. This method was developed in the early 1960's. It is not used for every piece of evidence; it is just another tool available in the latent processing field.

Sequence

Magnetic Powder can be used at the Forensic Scientist or Technician's discretion, usually after cyanoacrylate fuming. Magnetic Powder Processing is not suited for processing metal objects or porous items such as checks, raw cardboard, or paper sacks; however, it can be used on shiny slick surfaces such as magazine covers, match book covers, etc.

PROCESS FOR USE

All powder is purchased and not prepared in the laboratory.

1. Prior to applying the powder to the surface that is to be processed, view the item for prints that are visible to the eye; such as prints in blood, grease, or any foreign residue. If there are visible latent, patent, or plastic prints:

    a) Do not handle the evidence excessively since the item has not yet been processed.

    b) Consider alternative processing techniques for prints in blood, grease, or any foreign residue.

2. Take the jar of powder and tap the jar into the palm of the hand several times to break up clogs of powder and loosen powder that has settled.

3. Stick large bulb end of wand into the jar to pick up metal shavings. Pull the rod out of the wand to release metal shavings.

4. Go over the surface using a back and forth motion with only the metal shavings coming in to contact with the surface. CAUTION: If the metal bulb end comes in to contact with the surface, it could scratch or destroy a latent print.

5. Remove excess powder from the item processed.

    a) Tap the item lightly on the counter.

    b) Use a short bristle brush (brushing with the flow of ridges).

    c) Make multiple lifts of the same print as necessary.

6. Preserve the latent print for later comparison by either photography or a lifting technique appropriate to the evidence.

Safety

There are no known safety hazards. Magnetic Powder Processing is not as messy as Powder Processing. Any overspill can be picked up with the wand and released back into the container.

PHYSICAL DEVELOPER

Description of Process

The Physical Developer process is used for processing porous surfaces, especially on porous surfaces that have been wet, and on U.S. currency. It reacts with the fats, oils, and waxes present in the fingerprint residue. Until the introduction of a two-solution pre-mixed kit, Physical Developer had to be mixed from seven different chemicals following a complicated mixing routine.

Sequence

Physical Developer can be used in conjunction with other processes but normally after IND, DFO, and Ninhydrin.

Process for Use

Physical Developer is typically purchased as a working solution and not prepared in the laboratory.

1. Lay out three (3) glass trays

    a) Maleic acid prewash If not used the Physical Developer will cause the paper to turn dark and obliterate any latent prints.

    b) Physical Developer working solution

    c) Water rinse

2. Immerse the item(s) in the prewash until the bubbles stop (do NOT use metal tongs).

3. Transfer the item(s) to the working solution. The tray with the working solution should be placed on an orbital shaker or manually rocked back and forth by hand. Leave the item(s) in the working solution for 5 to 15 minutes or until latents are developed.

4. Remove the item(s) and place them in a water rinse to remove excess solution.

5. Remove the item(s) from the water rinse and let dry.

6. Examine the item for latent prints and indicate the latent with suitable markings as appropriate to be preserved by photography.

7. If latents are hidden by a dark background color the background can be lightened up by placing the item(s) in a 50% household bleach – 50% tap water solution.

8. The prints will appear grayish-brown in color.

PHYSICAL DEVELOPER

ControlTesting

Reactionary substance: latent print on porous white paper

Positive results – grey/black color change

Negative results – no color change

Safety

The Physical Developer process can be carried out with no known health hazards, provided a few precautions are carried out, such as wearing lab coats, latex gloves, and safety eyewear. The reagents in the working solutions are corrosive and toxic and will cause black staining on skin and clothing. Maleic acid is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Mix in a fume hood while wearing gloves, lab coat and eye protection.

RHODAMINE 6G FLUORESCENT DYE PROCESSING

Description of Process

Rhodamine 6G is to be used only on non-porous items and after the item has been treated with cyanoacrylate fuming. Rhodamine 6G is a fluorescent dye used to make cyanoacrylate developed latent prints more visible on various colored surfaces. Lasers or alternate light sources are used in conjunction with this process. Rhodamine 6G enhanced latent prints will have to be photographed under a light source. Different carriers for the working solution can be utilized to decrease processing times, preserve inked markings on evidence, or for use on special surfaces.

Sequence

Rhodamine 6G is to be applied only after a non-porous item has been exposed to cyanoacrylate fuming. Powder application may be utilized before or after use of Rhodamine 6G.

Process for Use

Rhodamine 6G crystals or powder is purchased and working and stock solutions are prepared in the laboratory.

1. After the evidence has been processed by cyanoacrylate ester fuming, apply the appropriate Rhodamine 6G working solution by either dipping, or using a spray device or squirt bottle.

2. Place the evidence under a fume hood to dry.

3. Examine the evidence under the laser and view using an orange filter. The power setting (beam intensity) may be adjusted as needed.

4. If the dye appears to be in excess, it may be rinsed with an application of distilled water or methanol over the evidence to reduce its thickness. A second application of dye stain may be necessary after the rinse.

5. Examine the item for latent prints and indicate the latent with suitable markings as appropriate to be preserved by photography.

RHODAMINE 6G FLUORESCENT DYE PROCESSING

Instructions for the preparation of

R6G Stock Solution (Petroleum Ether based)

Makes 500 mL

Chemicals needed	Amount
Rhodamine 6G crystals	.5 g
Methanol	500 mL

INSTRUCTIONS
Dilute 440 mL of the stock solution to 2 liters with petroleum ether Adjust amounts as needed for 1 liter, 3 liters, etc. This working solution should be stored in a dark bottle.

Shelf life is 6 months

Source: Chemical Formulas and Processing Guide for Developing Latent Prints (Revised 1994)
U.S. Department of Justice, Federal Bureau of Investigation
Laboratory Division, Latent Fingerprint Section

Instructions for the preparation of

R6G Working Solution (Petroleum Ether based)

Makes 4000 mL

Chemicals needed	Amount
R6G stock solution	12 mL
Acetone	60 mL
Methanol	40 mL
Isopropyl Alcohol	60 mL
Petroleum ether	3700 mL

INSTRUCTIONS
The chemicals above should be combined in the order listed and can be mixed manually instead of using a magnetic stirrer.

Shelf life is 6 months.

Source: Chemical Formulas and Processing Guide for Developing Latent Prints (Revised 1994)
U.S. Department of Justice, Federal Bureau of Investigation
Laboratory Division, Latent Fingerprint Section

RHODAMINE 6G FLUORESCENT DYE PROCESSING

ControlTesting

Reactionary substance: cyanoacrylate print on glass slide or clear plastic

Positive results – fluorescence (orange due to filters)

Negative results – no fluorescence

Safety

Rhodamine 6G working solution and stock solutions are extremely flammable and caution should be used. This reagent should be mixed and applied to evidence under a fume hood so it is not inhaled. Gloves, a lab coat, and eye protection should be used.

WETWOP/WET POWDER

Description of Process

Wetwop and other sticky side powder equivalents are used to develop latent prints on the adhesive sides of tapes, decals, and other items.

Sequence

Wetwop/Wet Powder and other sticky side powder equivalents are typically used instead of other processes (cyanoacrylate ester fuming, Rhodmine 6G, etc.) on the adhesive side of items. The non-adhesive side may be processed as normal before applying Wetwop/Wet Powder and other sticky side powder equivalents. Adhesive surface processing may interfere with DNA analysis.

Process for Use

Wetwop and Wet Powder are typically purchased as a working solution. Shelf life is indefinite for purchased Wetwop and Wet Powder.

1. Shake container before use.
2. Pour small working amount of Wetwop, Wet Powder, or other sticky side powder equivalent into appropriately sized container.
3. Using latent print/fingerprint brush, apply solution onto the adhesive side of tape or other adhesive surface.
4. Leave on for 10-15 seconds.
5. Rinse off under slow running, cool water.
6. Let dry.
7. Examine the item for latent prints and indicate the latent with suitable detail as appropriate to be preserved by digital imaging/photography.

Safety

No known safety hazards. Although manufacturer caution states “Wet Powder is a highly stainable product. Use proper clothing.”

RUVIS (Reflected Ultra Violet Imaging System)

Reference:
SceneScope Advance SC-VIEWER-AD Ruvis User's Guide – Manual Part Number 81058 – Rev. 3 August 2007)

Safety *(Excerpt from User's Guide Page 7)*

Safety first!

• Long-sleeve lab-coats, gloves and safety glasses or other appropriate eye and skin protection such as UV protective glasses or a UV protective full-face shield must be worn at all time. The SceneScope is delivered with several standard accessories to protect the users:

- UV protective pair of goggles
- Full-face headgear protection with UV protective window.
- Screw-on shield with panel mounted captive screws, to be fixed on the quartz lens.

This safety equipment must be used at all time!

WARNING

UV exposures are not immediately felt.
User may not realize hazard until it is too late and damage is done.

Equipment:

- RUVIS Imager (Shown)
- SceneScope Advance SC-VIEWER-AD Ruvis User's Guide
- High Resolution Digital Camera and camera mount
- 254nm (Ultraviolet) Lamp
- (Optional Equipment: Video attachment for large screen display.)

RUVIS (Reflected Ultra Violet Imaging System)

Concepts, Mechanism and Functionality *(Excerpt from User's Guide Page 10)*

A RUVIS instrument consists of the imaging viewer, a powerful yet portable UV lamp, all necessary UV protection equipment, and the adapter ring for 35mm SLR cameras or digital cameras. The RUVIS device uses the viewer and lamp in conjunction with one another to produce a reflection off smooth, non-porous surfaces. As the UV light is shown across a surface, the material left behind, in this case a fingerprint, causes the UV light to "scatter". The viewer sees the scatter off the ridges and allows the technician to see the latent print on the surface. By changing the angle of light, you change the contrast of the print and increase its visibility, thus allowing you to visualize and photograph the latent print without any treatment or contact.

Sequence *(Excerpt from User's Guide Page 17)*

The SceneScope Advance may be used on smooth NON porous surfaces prior to any treatments.
It will give even better results after Cyanoacrylate Fuming on most non-porous surfaces.
It shall be used in the two steps preceding FLS use (prior to any treatment and after fuming but prior to dye staining).

Examples of excellent results:
On Tape, for the sticky side use no fuming. For the non-sticky side, best results are after fuming.

(FLS refers to a FORENSIC LIGHT SOURCE)

Best Practices

Refer to pages 16 through 18 of the User's Guide.

Training and User Orientation

All users must read the RUVIS User's Manual:

- *SceneScope Advance SC-VIEWER-AD Ruvis User's Guide – Manual Part Number 81058 – Rev. 3 August 2007)*

All users must complete Supervised Operation of the RUVIS Imager, UV Lamp and Image Capture to include:

- Powering the units on/off
- Complete Observance of Safety Precautions and Equipment
- Demonstrate Proper Focusing, Visualization and Capture of friction ridge detail.

WIN/AAFIS, IAFIS

COMPUTER DATABASES

WIN/AAFIS is the Western Identification Network/Alaska Automated Fingerprint Identification System. It is a ten print record database jointly shared by Alaska, Oregon, Idaho, Utah, Nevada, Montana, Washington, BICE (Bureau of Immigration and Customs Enforcement) and Wyoming. California and several other individual agencies are interface members of the network.

IAFIS is the Integrated Automated Fingerprint Identification System. It is the system and database maintained by the FBI.

The Latent Print Training Manual includes a section on the use of WIN. The procedures used can be found in the WIN AFIS21 Global Workstation GWS-L User Guide and Print Quest AFIS Manual.

IAFIS is not frequently utilized. Latent Examiners can be trained by a designated WIN Trainer. The procedures for IAFIS are outlined in the WIN AFIS21 Global Workstation GWS-L User Guide, Appendix B.

SEARCHING

All latent prints that are of sufficient quality and have not been identified with known finger or palm prints can be entered into WIN/AAFIS, APIS, or IAFIS if requested on the Request for Lab Services Form or if confirmed with the requesting agency/officer.

Latents are searched at the discretion of the examiner signing the report for the case.

PALM FILES - Individual Characteristic Database Samples

The PALM FILES for the Latent Print Discipline contain known palm, major case prints, ten print cards and sole impressions from suspect and elimination persons. These impressions are reference samples.

The reference samples are stored in a locked room. Latent Discipline employees have access to the room. The files for each individual are stored in manila envelopes and arranged alphabetically by last name. The samples are uniquely identified by name and laboratory case number.

DNA SAMPLING

Analysts in the Latent Print Discipline may be responsible for collecting contact DNA from evidence items.

The analyst should rely on the DNA Section to determine if any of their processing substances may interfere with subsequent DNA analysis. The analyst may use their discretion to determine the processing order, including at what stage the DNA sample is taken. This decision is based upon training and experience and is dependent upon the nature and the condition of the evidence.

Due to the possibility of DNA transfer which can occur with the re-use of fingerprint powder brushes, it is recommended that DNA be collected before the application of fingerprint powders.

Isolating DNA Samples

1. Standard casework precautions should be observed to prevent sample contamination, such as clean work table, evidence on fresh sheet of paper, new gloves, mask and new and/or cleaned sampling materials.

2. A sample may be isolated by swabbing or cutting it.

3. Let the DNA analysts know about any chemicals or processing that was performed in this section on the sample area prior to sample collection. This information may be noted in JTrax case activities and should appear in bench notes. It may also be noted on the sample packaging.

Swabbing Method

1. Take two swabs of each sample area (eg. Mouth area of can/bottle, textured areas on firearm). The first swab applied to the stain should be moistened, followed by a dry swab. These swabs should be packaged together as one sample.

2. Water used to moisten the swab should be prepared by the DNA section. The date opened is recorded on the bottle. This date and the lot number of the water should be in the analyst's case notes.

3. Swabs should be air-dried before packaging.

DNA SAMPLING

Packaging DNA Samples

1. Each **sampled area** should be given a unique number. For example, if there are two separate samples from item 41, then they should be labeled as 41-1 and 41-2 using hyphens to separate the item number from the sample number.

2. Each sample should be **isolated** separately and labeled.

   Examples of swab labels:

Isolated sample 41-1 from the mouth of the bottle (Item 41).
Isolated sample 41-2 from the handle of the bottle (item 41).

3. Samples collected from an item can be packaged together in a manila envelope and should be labeled for preservation purposes as a single item.

   Example:

Item #41TW: Swabs 41-1 and 41-2 from the bottle from item 41.

4. The created item should be added as evidence in LIMS and the DNA pending assignment in JTRAX is assigned to the DNA Discipline Supervisor to alert the DNA Discipline that contact DNA sampling has been completed.

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REVISION HISTORY

Changes from LPWI 2016 R0 to LPWI 2016 R1
PROCESSING WORK INSTRUCTION This ~~appendix~~ manual describes the use and safety considerations for the different processing techniques used in the Latent Print Discipline. ~~Instructions for preparing chemicals made at the laboratory are found in the Chemical Inventory file on the laboratory network.~~ This manual contains preparation instructions for chemicals prepared in-house.
Combined **INTRODUCTION** and **PROCESSING WORK INSTRUCTIONS** into one section labeled **INTRODUCTION**.
Removed Ninhydrin and DFO (1, 8 – Diazafluoren-9-one) from manual. Both replaced by IND (1, 2-Indanedione).
IND (1, 2-Indanedione) **Control Testing** Reactionary substance: ~~synthetic blood (Sirchie catalog No. SYNB8)~~ natural sweat on porous white paper
Added preparation instructions for Amido Black Developer, Amido Black Rinse, IND (1, 2-Indanedione and Rhodamine
WIN/AAFIS, IAFIS ~~INDIVIDUAL CHARACTERISTIC DATABASE SAMPLES~~ PALM FILES - Individual Characteristic Database Samples The ~~individual characteristic database sample files~~ PALM FILES for the Latent Print Discipline contain known palm, major case
Removed references for Ninhydrin and DFO. Added two new references for IND - Australian Federal Police and Parasram, Lawrence