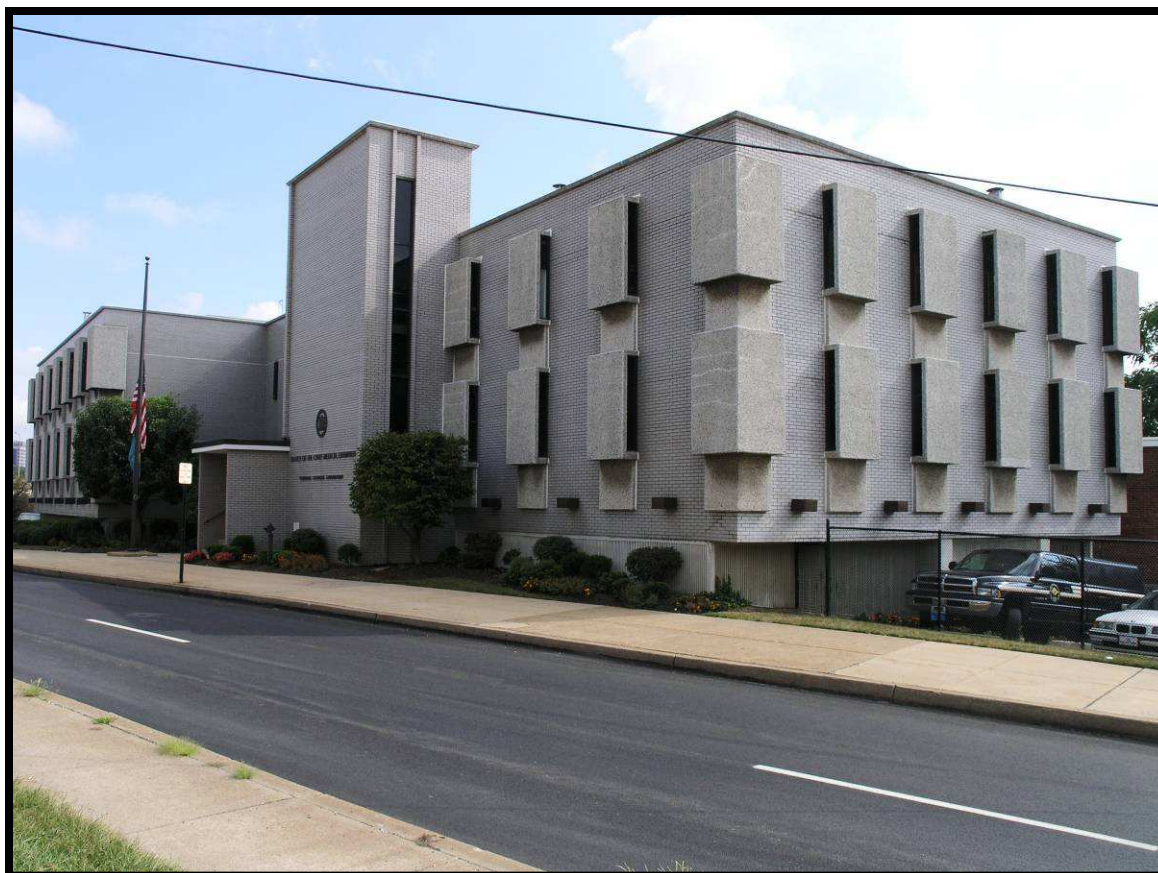




# **GUIDELINES FOR THE COLLECTION AND SUBMISSION OF FORENSIC EVIDENCE**

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Office of the Chief Medical Examiner  
Forensic Sciences Laboratory  
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## ***Mission Statement***

The OCME evidentiary guidelines are dedicated to all past, present, and future public servants who dedicate their careers to providing the state of Delaware with the highest degree of law enforcement, forensic science, and medical-legal death investigation services while maintaining the traditions of fairness, professionalism, and integrity.



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# **INTRODUCTION**

- The mission of the Delaware Office of the Chief Medical Examiner Forensic Sciences Laboratory (OCME) is to promote the sound administration of justice through the investigation of sudden, accidental, or suspicious deaths and the documentation and presentation of reliable qualitative and quantitative scientific analysis of chemical and biological evidence samples. A goal of the OCME is to handle and analyze evidence in a manner that will minimize loss, contamination, and/or degradation.
- The purpose of these guidelines is to provide direction for the safe and efficient methods of collecting and preserving evidence that may be received by the OCME.
- These guidelines also describe the specific forensic examinations performed by the OCME.
- OCME services are available to all local, state, and federal law enforcement/ criminal justice agencies, as well as criminal defense agencies residing in the state of Delaware for the purpose of rendering assistance in criminal investigations and legal proceedings.
- All submissions of evidence must be in connection with investigations that take place in Delaware or are in some way connected to the state of Delaware.
- Examinations will not be conducted for private individuals or corporations.
- Evidence is received from outside agencies at the OCME by Forensic Evidence Specialists or can be picked up statewide at various agencies courtesy of the OCME Evidence Courier Service.
- OCME Forensic Evidence Specialists will ensure the integrity of all evidence received by the OCME for forensic evaluation.
- These guidelines comply with the Laws of the State of Delaware and establish evidence standards as set forth by the American Society of Crime Laboratory Directors and International Association for Property and Evidence.
- If any further assistance is desired, please contact the laboratory at (302) 577-3420.

## ***USING THE OCME IN THE JUDICIAL PROCESS***

- In addition to conducting the scientific analysis of chemical and biological evidence, OCME analysts are available to present expert testimony concerning their findings before the courts.
- The individual who signed the report is the analyst responsible for the reported results. All correspondence with the analyst must clearly reference the laboratory number.
- Analysts needed for trial must be issued a properly addressed subpoena.
- Analysts must also be contacted as far in advance of the trial as possible to avoid scheduling conflicts, and so that time will be available for proper court preparation.
- The OCME requires that at least 24 business hours of advance notice be given to analysts needed for trial. (e.g. Analysts must not be contacted on Sunday for Monday trial.) At this time, the analyst should be notified as to the exact time they will be needed to testify.
- If proper notification is not provided, analysts will not be required to provide testimony.
- If it has been determined that a case is not going forward due to unforeseen circumstances or changes in the defendant's plea, the laboratory must be contacted as soon as possible. This allows for analysts to concentrate on and proceed with other case analyses, and, in some cases, analyses may no longer be needed.



## ***CRIME SCENE PROCESSING***

- In general, law enforcement will collect crime scene evidence.
- In medical-legal death investigations, OCME forensic death investigators will take custody of the decedent and collect evidence on or attached to the body.
- In major drug seizures and/or cases involving DNA (such as bodily fluids), OCME staff may be available to provide consultation at crime scenes.
- To request assistance from the OCME after hours, call the main number (302) 577-3420 and request that the on-call medical-legal death investigator be paged.
- The OCME Director and Controlled Substances Laboratory Manager should be consulted for suspected clandestine laboratory cases. A clandestine laboratory poses a dangerous safety and health threat and should never be evaluated without the assistance of professionally-trained officers and chemists.



# **GENERAL EVIDENCE SUBMISSION GUIDELINES**

## **GENERAL INFORMATION**

- All submitted pieces of evidence must be properly packaged and sealed as described herein. All submissions must be accompanied by an “Evidence Intake”, form FES-100, which are available at the OCME.
- Only evidence submitted to the laboratory is to be listed on the FES-100. Do not include descriptions of items taken at the time the evidence was confiscated, but which were not sent for testing.
- Individual pieces of evidence must be listed separately. Individual pieces of evidences are defined as any item or items found in a single location, commingling (e.g. green pills, red capsules, a cigarette box, etc.). However, if the evidence items are packaged separately, each package must have its own evidence number.
- All pieces of evidence from the same case must be submitted together and must be included on the same FES-100 “Evidence Intake” form. Multiple sheets may be necessary, and each page should be numbered.
- Evidence that will not undergo examination will not be accepted at the laboratory for storage or holding, unless a special exemption is made.
- Any evidence that may require multiple examinations to be performed must be discussed with the OCME prior to submission.
- Evidence submitted for multiple analyses, including DNA, must first be submitted to the OCME DNA Laboratory.
- Evidence mailed to the OCME must be sent by a method which will track the package (e.g. FEDEX, UPS, etc.) for chain of custody purposes. Mailed evidence must be packaged following the guidelines outlined in the proceeding sections, “Choosing Containers” and “Sealing and Marking Containers” (pages 12-14).
- Only the inner evidence packaging must be properly sealed and labeled. The outer, mailing packaging only needs to include the proper address and an attention to the Forensic Evidence Specialist.
- The subsequent individual Laboratory sections delineate specific packaging and/or labeling requirements.

## **CHOOSING CONTAINERS**

### **Wet/Damp Evidence**

- Damp, biological, or wet materials must be packaged in paper bags or air dried prior to placement in a plastic bag. Plastic bags promote bacterial and fungal growth, which deteriorates the quality of evidence.
- If wet evidence is submitted in a paper bag, the Forensic Evidence Specialist must be notified upon submission that the evidence needs to be dried.

### **Arson Unit Evidence**

- Wet evidence retrieved from a fire scene must be sealed in a metal can and transported as soon as possible to the OCME. Arson evidence is to be kept at room temperature or colder. It must be transported to the OCME Arson Laboratory within two weeks of collection to maintain the integrity of the can and evidence, since metal cans that contain debris with water present will rust.
- Evidence cans containing wet or dry soil samples must be frozen immediately upon collection to prevent the microbial degradation of accelerants. Additionally, it is best to refrigerate or freeze very soiled clothing. The Forensic Evidence Specialist must be notified upon submission that the evidence needs to be stored in a freezer.

### **Controlled Substances Unit Evidence**

- Fresh plant material or whole plants must be packaged in paper bags or envelopes to prevent rotting.
- The Forensic Evidence Specialist must be notified upon submission that the evidence contains fresh plant material, which needs to be dried prior to submission.

### **Small Evidence**

- Small evidence (e.g. hairs, fibers, charred materials, blood scrapings, powders, glass, soil, paint chips, etc.) must be submitted in plastic bags or druggist folds that are then placed in envelopes. Paper bags and envelopes leak at the corners and seams, so they are not suitable for small pieces of evidence.

### Large Evidence

- Large evidence (e.g. garments and other non-sharp or non-fragile evidence, etc.) must be packaged in paper bags or wrapping. It is preferable to isolate and protect the area to be examined, rather than wrap an entire object (e.g. tape white paper over an area of suspected latent prints with tamper-evident tape).
- If large evidence submitted in a paper bag may shed miscellaneous smaller evidence (e.g. debris, soil, hair, etc.) the seams of the bag must be taped.

### Fragile Evidence

- Evidence that is delicate (e.g. light bulbs, windows, etc.) must be placed into rigid containers and marked with a "FRAGILE" warning on the outer most packaging.

### Sharps Evidence

- Small or individual sharp evidence (e.g. broken glass, bent metal, knives, hypodermic needles/syringes, etc.) must be placed into a rigid plastic "sharps" tube.
- Large sharp evidence must be placed into a puncture-proof container. When using cardboard boxes to collect large sharp evidence, the evidence must first be wrapped in paper.
- All sharp evidence must be marked with a "SHARPS" warning on the outer most packaging.
- Do not submit the actual razors used to collect blood stains.
- **Do not submit the broken ampoule used for a field test on drug evidence, since the acid inside the ampoule destroys the evidence and poses a hazard to the examiner and police personnel.**

### Liquid Bodily Fluid Samples

- Liquid blood and urine must be collected in sealed rigid containers that do not leak. The sealed container must be placed into a sealed plastic bag that will hold any liquid should the primary container break.

### **Biohazardous Evidence**

- Biohazardous evidence must be marked with the international “BIOHAZARD” symbol when it is suspected or known that the material comes from any of the following:
  - Liquid or dried blood
  - Other bodily fluids (e.g. semen, saliva, urine, vaginal fluid, fecal material, and hypodermic needles in contact with bodily fluids)
  - Body packed contraband (Note on evidence exam form if the evidence was once located in someone’s body cavity.)

### **Chemically Treated Evidence**

- Evidence that has been chemically processed prior to submission (e.g. ninhydrin on paper) must be marked with a “CHEMICALLY TREATED” warning on the outermost packaging.

## **SEALING AND LABELING CONTAINERS**

- A proper seal is one where the evidence cannot escape or be contaminated or altered without apparent damage to the seal or packaging (see Appendix for pictures of properly and improperly sealed evidence).
- Tamper-proof evidence tape, heat seals, and other tamper-proof evidence seals must be used.
- Cellophane tape, staples, regular plastic tape, etc. are not acceptable sealing materials and will not be accepted.
- The individual applying the seals must initial/sign the seal.
- Manufacturer seals (e.g. the bottom flap of a manila envelope) must be initialed or taped and initialed to show that the seal integrity was verified.
- Evidence must be accessible by making one cut or opening in the packaging, while still maintaining any seals that are already in place. Therefore, do not fold the outer packaging material numerous times around the evidence before sealing.
- Evidence must not be over packed into evidence containers, since this can cause tears and distortions to the container.

- Unusually shaped evidence must be packaged in boxes, not envelopes.
- When packaging in envelopes with a cellophane window, make sure the window and its seams are secure and intact.
- The outer packaging must be labeled with at least the following:
  - Agency case number
  - Evidence/item number (if applicable)
  - Initials of the person collecting the evidence
  - Whenever possible, a one inch space should be left at the top of the package for laboratory marking purposes once it is brought to the OCME.
  - Any evidence sealed incorrectly will be returned to the submitting agency and will need to be properly sealed prior to acceptance into the laboratory.
- Do not use ink that will blur or run when labeling evidence.





# **OCME COURIER SERVICE & DIRECT OCME EVIDENCE SUBMISSIONS**

## **OCME EVIDENCE COURIER SERVICE**

- Agencies in Kent and Sussex counties may request that evidence seized in violation of Title 16 be transferred to the OCME by the Forensic Evidence Specialist.
- Each requesting agency is assigned two secure lock-boxes for the transfer of evidence. Each agency should have an assigned evidence custodian to maintain combinations of lock-boxes.
- The evidence custodian will submit, along with the evidence, an inventory sheet detailing all items in the lock-box being transferred to the OCME.
- All submitted evidence will be checked by the Forensic Evidence Specialist to verify that it is in agreement with the inventory sheet prior to the lock-box being transported to the OCME vault.
- All submitted evidence will be examined by the Forensic Evidence Specialist to ensure proper packaging, identification, and seal.
- Any problems noted with the packaging, identification, seal, or any discrepancies between the inventory sheet and evidence submitted may result in the entire lock-box being returned to the submitting agency, along with an explanation of why the evidence was refused by the OCME.

## **DIRECT OCME EVIDENCE SUBMISSIONS**

- Law enforcement agencies located within New Castle County may telephone or electronically contact the Forensic Evidence Specialist to schedule an appointment. These appointments will be entered by the Forensic Evidence Specialist onto the Microsoft Outlook calendar manager for the OCME and submitting agency.
- Law enforcement officers will personally deliver evidence to the OCME at the pre-appointed time and date.
- The Forensic Evidence Specialist will examine the submitted evidence to ensure proper packaging, identification, and seal.
- Evidence will not be accepted if it is not properly packaged, identified, and sealed. (Note that materials are available at the OCME Forensic Evidence Unit

- Upon completion of all required analyses, evidence will be placed in a lock-box and returned to the submitting agency at pre-established times.
- The Forensic Evidence Specialist will sign and date “Return Evidence Receipts” for the receiving agency. These receipts will be included with the evidence in the lock-box.
- The receiving agency will sign and date the receipts, once evidence is received, verifying receipt.
- The original receipt will be retained by the OCME; a copy will be made for the receiving agency.

# ***DNA LABORATORY***

## **LABORATORY SCOPE**

- To isolate and identify blood and other bodily fluids from crimes such as sexual assault, homicide, burglary, and motor vehicle accidents
- To identify the presence of urine, blood, saliva, seminal material, or fecal material
- To examine bodily fluids and hair samples to determine species (human, animal) and DNA typing information
- To statistically interpret DNA data to link victims or suspects with one or more pieces of evidence to a reasonable degree of scientific certainty
- To maintain the Combined DNA Indexing System (CODIS) database
- To collect trace evidence from submitted items
- To perform garment defect examinations
- To perform blood spatter pattern documentation
- To assist police departments in sending out urine or blood samples to reference laboratories for cases of drug facilitated sexual assaults

## **TYPES OF DNA EVIDENCE INCLUDE:**

- Bodily fluids
- Clothing/bedding
- Condoms
- Sexual assault kits
- Furniture or cuttings from furniture (e.g. mattress, sofa, etc.)
- Other items suspected of containing serological or DNA evidence

## **SUBMISSION OF DNA EVIDENCE**

- **IMPORTANT:** All biological evidence must be packaged in paper, not plastic, containers, unless an acceptable exception applies.
- All biological evidence submitted to the DNA Laboratory must be assumed to be biohazardous.
- Submitting agencies must adhere to the guidelines delineated below in order to prevent cross-contamination of evidence.
- Contact the OCME DNA Laboratory for assistance and/or guidance regarding the collection of biological evidence when there is any question in determining the correct collection and submission procedure.
- A letter of transmittal must accompany all DNA evidence. This letter must include a brief description of the facts of the case and the testing requested. Its format must follow the guidelines set forth in the FBI Handbook of Forensic Sciences (Addendum A).
- The submitting officer must consult with the DNA Technical Leader and obtain approval for the submission prior to scheduling an appointment with the Forensic Evidence Specialist.

## **COLLECTION OF DNA EVIDENCE**

### **Collection of DNA Knowns**

- Known biological samples must be collected from both the victim(s) and the suspect(s) for comparison purposes.
- It is recommended that two, five-milliliter tubes of blood be collected in a purple-top tube containing EDTA anti-coagulant.
- The blood tubes must be labeled with the full name of the person whose blood is being submitted, their date of birth, the collector's name (person drawing the blood), and the date/time/location of collection.
- The blood tubes collected from each individual must be placed into separate, sealed plastic bags.
- The blood samples must be refrigerated, not frozen, until they can be delivered to the laboratory.
- If either the victim(s) or the suspect(s) have received a blood transfusion, it is necessary to wait ninety days to obtain a valid blood sample.

- If a blood sample cannot be collected, it is acceptable to collect a buccal sample for DNA evidence as an alternative (see below).

### **Collection of Buccal Swabs for DNA Evidence**

- Collect buccal (cheek) samples using the Felon DNA Database Buccal Swab Collection Kit containing the following.

- Kit instruction sheet
- Sterile foam tipped applicator
- Indicating **FTA®** Micro Card
- DNA Database Collection Card (*OPTIONAL*)
- Multi-barrier pouch and desiccant
- Kit envelope and evidence seal
- Kit mailing envelope and kit shipping seal

- As per the enclosed DNA Buccal Swab Collection Kit Instruction Sheet, the submitting officer will:

- Remove all components from the kit envelope.
- **Optional:** Completely fill out the DNA Database Collection Card including signatures of Subject and individual obtaining sample and the Subject's left thumbprint and right thumbprint.
- Put on biohazard barrier gloves and place the Indicating **FTA®** Micro-Card on a clean, dry, flat surface. Label the Indicating **FTA®** Micro Card with the Subject's name, initials of person collecting sample, and date of collection.
- Remove the foam tipped applicator from the DNA Buccal Swab Collection Kit.

#### **NOTE: DO NOT TOUCH THE FOAM TIP.**

- Holding the plastic handle of the foam tipped applicator, place the foam tip in the Subject's mouth and rub one side of the foam tip on the inside of the cheek for 30 seconds. Repeat using the opposite side of the foam tip for the other cheek. Run the foam tip along the gum-line and fold of the cheek and under the tongue, soaking up as much saliva as possible.

➤ Carefully lift the paper cover on the Indicating **FTA®** Micro Card to expose the pink sample area. Press the flat, circular foam applicator tip within the sample area. **Without lifting the foam tip from the Indicating FTA® Micro Card**, squeeze the tip using a side-to-side motion (90° in each direction) 3 times to completely saturate the sample area. Turn the applicator over and repeat with the other side of the foam tip **within the same circle**. After the foam tip has touched the Indicating **FTA®** Micro Card, do not re-insert it into the mouth (See DNA Figure 1).

**DNA Figure 1:** Properly Stained Buccal Swab (left); Poorly Stained Buccal Swab (right)



- Discard the applicator into a biohazardous waste container.
- **Allow the Indicating FTA® Micro Card to dry completely (30 – 60 minutes) at room temperature.**
- When the Indicating **FTA®** Micro Card is completely dry, place it in the multi-barrier pouch with a desiccant. Remove the paper backing of the seal and seal the multi-barrier pouch. Initial and date across the seal.
- Place the multi-barrier pouch and the completed DNA Database Collection Card (*if applicable*) into the white DNA Buccal Swab Collection Kit envelope. Seal the DNA Buccal Swab Collection Kit Envelope and place Evidence Tape across the seal. Initial and date across the evidence tape.
- Place the completed DNA Buccal Swab Collection Kit(s) (*white envelopes*) into the manila mailing envelope. Seal the manila mailing envelope and place the kit shipping seal across the seal. Initial and date the kit shipping seal.

- FTA cards containing buccal samples must be air dried and placed in a properly labeled envelope with sealed corners. The opening must be sealed from end to end.
- Envelopes must contain a minimum of the following information, written clearly and legibly:
  - Date/Time
  - Subject's name
  - Location
  - Collector's name
  - Agency Complaint Number
- Buccal samples must never be refrigerated.

### **Collection of Bloodstains Using Sterile Swabs**

- The following items are needed for the collection of bloodstains:
  - Sterile or distilled water (may be purchased at a pharmacy) aliquotted into multiple containers for one-time use
  - Individually wrapped, sterile swabs
  - Disposable sterile plastic droppers or dropper bottle
  - Drying box to set the swabs in while they dry
  - Tape and marker to label the swabs
  - Individual envelopes for each swab or individual swab boxes
  - Evidence tape
- Prepare "single use only" sample size vials of water to reduce the risk of contamination. Use one vial for each designated individual area or scene and then discard it.
- Only touch the wooden shaft when opening a packet of cotton-tipped swabs. Touching the cotton tip risks contamination of the evidence.
- To collect a wet bloodstain, use a dry sterile swab.
- To collect a dried blood stain, moisten a swab with sterile water.
- To collect a very small stain from a surface, use a small portion of the swab to rub the stain. This will allow the stain to be concentrated in one spot on the swab.

- Collection swabs must be labeled with an evidence identifier by adhering a label or a piece of tape directly on the swab shaft.
- The swabs must be allowed to air dry before returning them to their original packaging or clean envelopes. A small box with holes punched in the top can be used.
- Store the swabs by placing the wooden shaft into a hole in the box, ensuring that the swabs do not touch one another.
- Swab packages must be labeled with the location of collection site, evidence number, date, time, and collector's initials and sealed with tamper-evident tape.
- Swabs must never be packaged in plastic tubes, since this allows condensation to form, leading to the decomposition and destruction of the evidence.
  
- Gloves must be changed between the examination and collection of each piece of evidence to avoid cross-contamination.

### **Collection of Dried Bloodstains Using Scalpel Blades**

- The following items are needed for the collection of bloodstains:
  - Disposable sterile scalpel blades
  - Clean white sheets of paper
  - Markers and evidence tape
  - Outer container such as an envelope
- Use a disposable scalpel to scrap the dried blood into a clean white sheet of paper.
- Fold the collection paper to ensure that the sample does not spill out.
- Place the folded paper into a small envelope.
- Properly seal and label the envelope using the general "Sealing and Labeling Containers" guidelines (pages 14-15) and the "Labeling of DNA Evidence" guidelines (page 29).
- If disposable, sterile scalpel blades are not available, a reusable blade may be used. It is necessary to thoroughly wipe the blade with a fresh alcohol pad between each sample collection. After swabbing with alcohol, allow the blade to thoroughly air dry prior to re-use.



- The scalpel blades used for scrapping bloodstains must never be submitted as evidence to the OCME DNA Laboratory.

### **Collection of Blood-Soaked Evidence**

- Photographs of the bloodstain patterns on larger items must be taken using forensic photography techniques (page 27).
- Any visible stain patterns present and any visible damage to fabrics (e.g. cuts, tears, abrasion) must be properly documented.
- Blood-soaked evidence must be allowed to dry before packaging. If it is not possible to allow the item to dry at the scene as is, then it is advisable to cut out any patterns present in the bloodstains and allow that portion to dry in a box or other form of packaging which will not alter the pattern. Wet evidence must never be collected in plastic bags, since this can lead to decomposition and destruction of the evidence.
- Blood soaked evidence must never be folded during collection and packaging, since this will change the patterns and the ability to accurately document the bloodstain patterns present.
- Package clothing that includes damp soil or other potentially loose debris into a brown paper bag that has been thoroughly taped along all seams to prevent loss of trace evidence.
- Smaller items with loose debris must be packaged into envelopes or paper bags that have been thoroughly taped along all seams to prevent loss of trace evidence.
- The stains that have been detected must be properly documented and cut out for further examination at the OCME DNA Laboratory. The cutting must be larger than the stain, so that an unstained area of the fabric can be tested as a control, if necessary.
- Wet semen-like deposits present on a nonporous surface (e.g. wooden floor, etc.) must be collected using a sterile swab following the sterile swab guidelines outlined in the preceding section “Collection of Bloodstains Using Sterile Swabs” (pages 23-24).

### **Collection of DNA Evidence from Skin Surfaces**

- DNA evidence on skin surfaces must be collected using a sterile swab following the sterile swab guidelines outlined in the preceding section “Collection of Bloodstains Using Sterile Swabs” (pages 23-24).
- Swab the skin surface suspected of containing a bodily fluid deposit. This

can be done on the shaft of a penis whereby the victim's vaginal or anal cells would be detected. Bite marks or areas of oral contact may be swabbed for the presence of cells and saliva.

### **Collection of Semen, Semen Stains, and Other Bodily Fluids**

- Evidence must be allowed to dry before packaging to prevent decomposition and destruction of the evidence.
- Each dried piece of evidence must be packaged in separate brown paper bags that have been thoroughly taped along all seams to prevent loss of trace evidence.
- Large items with possible DNA evidence (e.g. automobile seats, mattresses, carpeting, or furniture) cannot be seized in their entirety. Therefore, they must be examined in the dark using an alternate light source (e.g. FLS 5000 from Omnicrome or laser) with the appropriate goggles for the visualization of bodily fluids.

### **Collection of Condom Evidence**

- Condoms must be properly dried prior to submission to the OCME DNA Laboratory. The contents of the condom must be emptied onto a sterile gauze pad, and both the condom and the gauze must be dried before properly packaging them in a properly labeled and sealed paper bag.
- If it is absolutely necessary to submit a wet condom, the top of the condom must be fastened with a binder clip, bulldog clip, twist tie, or other suitable closure to prevent leakage. The properly fastened condom must then be placed in a properly sealed and labeled paper bag. Since packaged, wet biological evidence degrades quickly, the evidence must be refrigerated immediately after collection and dried as soon as possible. The Forensic Evidence Specialist must be notified upon submission if evidence needs to be dried.
- Condoms must never be submitted in a bag with the condom wrapper (even if semen is not visible). This can cause the contents of the condom to contaminate the wrapper and destroy the opportunity to develop latent prints on the wrapper.
- Even if semen is not visible on the condom, it should still be submitted to the OCME DNA Laboratory, since the penile skin cells will adhere to one side of the condom and the victim's skin cells will adhere to the opposite side of the condom.

### **Collection of Bloodstain Pattern Evidence**

- Bloodstain pattern examination is a valuable tool that can aid in the determination of the events that took place during and after an assault involving the loss of blood. Pattern analysis regarding crime scene reconstruction should be sent to the Federal Bureau of Investigation (FBI).
- Bloodstain patterns must be properly documented using forensic photography techniques and sketches. If a body is present at the scene, the relationship of the stain patterns to the orientation of the body must be photographed.
- Proper Guidelines for photographing DNA evidence are as follows:
  - A ruler or scale must be included in the photographs.
  - “Overall” shots must be taken to show orientation and overall patterns formed.
  - Close-up shots (distance of two feet or less) of pertinent stains must be taken perpendicular to the pattern with a scale present. Calculations will be made from these shots.
  - Deviations from a 90° angle should not be made, since this will impede the ability to make accurate calculations from the photograph due to angle distortion.
- Bloodstain patterns found on clothing, bedding, and the surroundings of the individuals involved must be properly documented.
- The investigating officer must examine the scene closely looking for fine mists. When a great amount of force is placed upon a source of blood, a fine mist of blood spatter will be produced. Fine mist will not travel as far as larger drops (e.g. back spatter from a gunshot wound creating minute bloodstains on the tops of the shooter’s shoes). These stains may not be readily visible unless the item or area is examined up close.
- Bloodstain pattern evidence must be packaged in such a way that pattern transfers will not occur and patterns will not be removed due to abrasion.

### **Collection of Blood-Stained Evidence**

- Blood-stained evidence consists of any item contaminated with biological matter. This evidence must be dried before submission to the OCME.
- Wet evidence must never be collected in plastic bags, since this can lead to decomposition and destruction of the evidence.
- Bloodstained evidence must be wrapped in a clean, paper bag, placing all debris or residue from the garments in clean paper or a sealed enve-

lope.

- Bloodstain patterns must be preserved and the creation of additional stain patterns during drying and packaging must be avoided. Bloodstain patterns must be collected in accordance with the “Collection of Bloodstain Pattern Evidence” guidelines (page 27).

### **Collection of Large Pieces of Evidence for the Examination of Blood or Bodily Fluids**

- Large pieces of evidence (e.g. mattresses, car seats, etc.) will not be accepted in their entirety by the OCME.
- The collecting officer must cut out the evidence stain on the large item. The cutting must be larger than the stain, allowing for a control sample, if necessary.
- The officer will take possession of any remainder of the large item, which they will return to their agency.

### **Submission of Sexual Assault Evidence/Kits**

- Standard Sexual Assault Evidence Collection Kits (SAECK) collect vaginal, oral, and anal evidence, as well as reference blood.
- SAECK must be refrigerated immediately if blood is present in the kit and submitted to the OCME DNA Laboratory as soon as possible.
- SAECK without liquid blood should be kept refrigerated, if refrigeration is available.

### **Collection of Sharps Evidence**

- Sharps must be placed into a knife box, which is then secured with plastic or metal wires.
- All openings in the knife box must be sealed with approved evidence tape.
- For larger sharps that do not fit in a knife box, cut an appropriately sized piece of cardboard (i.e. no more than 0.5 inches longer than the blade) and fold it over the sharp portion of the item. Place a piece of approved evidence tape over the entire length of the cardboard cover, as well as securing the cover to the handle of the item.
- A “SHARPS” warning must be placed on the outer most packaging.

## **LABELING OF DNA EVIDENCE**

- All evidence submitted to the OCME DNA Laboratory must be properly labeled with a minimum of the following:
  - Date/Time
  - Subject's name
  - Location
  - Collector's name
  - Complaint Number



# ***TOXICOLOGY LABORATORY***

## **LABORATORY SCOPE**

- To provide scientific and technical support to the pathologists of the OCME in determining the cause and manner of death
- To analyze postmortem specimens for the presence or absence of drugs and their metabolites, volatile substances such as ethanol and carbon monoxide, and poisons or other toxic chemicals
- To analyze ante-mortem biological specimens for the presence or absence of drugs and toxins that may be important in criminal cases such as DUI and DWI

## **TYPES OF TOXICOLOGY EVIDENCE INCLUDE:**

- Postmortem biological specimens (blood, vitreous humor, urine, bile, gastric contents, subdural/epidural clots, tissues such as brain and liver, etc.)
- Antemortem biological specimens for both postmortem and DUI cases (whole blood, serum, etc.)
- Drug paraphernalia collected from the scenes of postmortem cases
- Prescription medications or other pills collected from the scenes of post-mortem cases
- Liquid evidence collected from the scenes of postmortem cases (baby bottles, soda cans, etc.)

## **SUBMISSION OF TOXICOLOGY SPECIMENS AND EVIDENCE**

### **Driving Under the Influence (DUI) Specimens**

- All DUIs must be submitted to the Delaware State Police (DSP) Crime Laboratory, located in Dover, DE, for testing. The exception is for DUI cases involving fatal motor vehicle accidents. These cases must be submitted directly to the OCME for testing using the guidelines set forth in the “OCME Courier Service and Direct OCME Evidence Submissions” section (pages 17-18).
- Submitting officers should bring DUI specimens to the closest centralized location per DSP Crime Laboratory Submission Guidelines.
- Submitting officers not able to bring DUI specimens to a centralized location

can arrange an appointment for the Forensic Evidence Specialist to pick up and transport the specimen to the DSP Crime Laboratory following the “OCME Evidence Courier Service” guidelines (page 17-18).

- All DUI specimens should be submitted to the DSP Crime Laboratory as soon after the date of arrest as possible, preferably within 10 days of arrest.
- DUI specimens must be properly labeled, packaged, and sealed. Failure to comply may result in the specimen being returned to the submitting agency untested with an explanation of why the specimen was returned.
- DUI specimens must be submitted with a completed Alcohol Influence Initial Report (AIIR).
- Any unauthorized DUI specimen submitted directly to the OCME will be returned untested, with an explanation of why it was refused, or transported via the OCME Evidence Courier Service to the DSP Crime Laboratory.

### **Sharps and Liquid Evidence**

- Sharp or pointed objects (e.g. syringes submitted as drug paraphernalia) must be placed in approved sharps containers following the “Sharps Evidence” guidelines (page 13) prior to being submitted.
- The container must be labeled with “SHARPS” and “BIOHAZARD” warnings.
- For exposed syringes, the needle should be stuck into a cork by placing the cork on a hard flat surface and carefully pushing the needle into it. Never attempt to cap or cover the needle by holding the cap or cork in your hand.

### **Liquid Samples**

- Liquid evidence (e.g. baby bottles and soda cans) must be refrigerated immediately upon collection and submitted to the OCME Toxicology Laboratory as soon as possible.

### **Prescription Medications**

- Prescription medications may be submitted with postmortem specimens. Medications must not be submitted for cases that do not require Toxicology testing.
- Prescription medications must only be collected in cases of suspected drug deaths or suicides. Medications will not be accepted by the OCME Toxicology Laboratory for natural death cases, unless an exception has been made with the approval of the Chief Toxicologist or Toxicology Laboratory Manager.



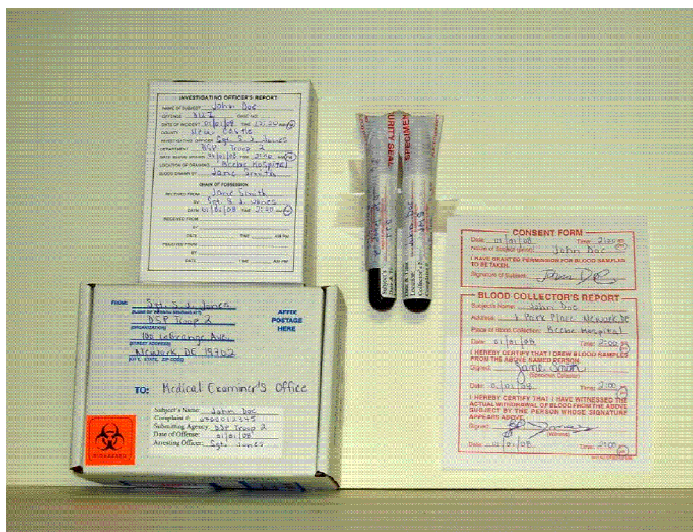
- Only prescription medications suspected of contributing to the cause of death must be submitted to the OCME Toxicology Laboratory.
- Prescription medications must be placed in proper evidence bags and be properly labeled and sealed. Failure to comply may result in the evidence being returned to the submitting investigator with an explanation of why the evidence was returned.
- Prescription medication evidence bags must be labeled with a minimum of the following:
  - Decedent's name
  - OCME case number

## **COLLECTION, PACKAGING, AND LABELING OF TOXICOLOGY SPECIMENS**

- No specimens will be accepted that are not properly packaged.

### **DUI Blood Specimens**

- Blood specimens should be collected in at least two, ten-milliliter gray-top tubes containing Sodium Fluoride and Potassium Oxalate preservatives.
- Each blood tube must be properly labeled and packaged (see TOX Figure 1) with the following minimum information:
  - Subject's first and last name
  - Date, time, and location of collection
  - Collector's first and last name
  - Complaint number



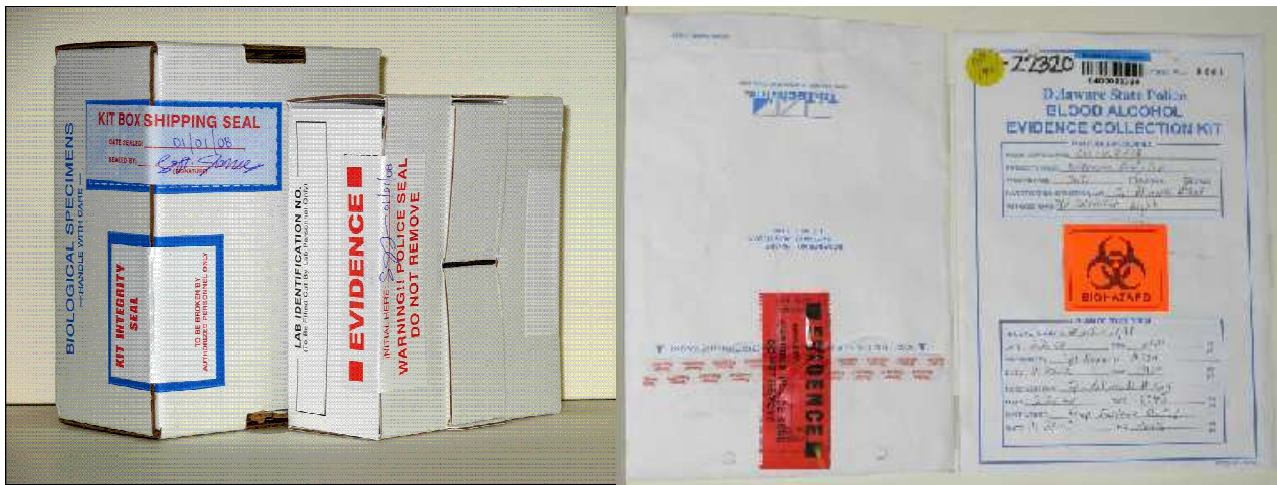
**TOX Figure 1: Proper Packaging of DUI Specimens**

- The sealed blood tubes must be packaged in an approved evidence envelope or box.
- A completed Consent Form and Blood Collector's Report must be submitted with the blood tubes, when appropriate.
- Approved evidence tape must be placed on blood tubes (TOX Figure 2).

**TOX Figure 2:** Proper taping, sealing, and labeling of DUI blood tubes



- Approved evidence seals must be placed on the outer package (evidence envelope or box) with the collecting of-



**TOX Figure 3:** Proper evidence seal initialed and dated on the outer packaging (above left); Improper evidence seal not across envelope seam (above right)

ficer's initials and date on the seal (TOX Figure 3).

- If regular tape is used, initial and date across the evidence tape at the point where it meets the package.
- The outer package must be properly labeled with the following minimum information:
  - Subject's name
  - Complaint number
  - Submitting agency
  - Date of offense
  - Arresting officer
- All evidence packages must contain a "BIOHAZARD" warning.
- Do not submit used syringes (or syringe caps) used for blood draws.
- Refrigerate, do not freeze, blood samples.

### **Postmortem Specimens**

- Peripheral femoral blood is the preferred testing specimen and, if possible, should be collected and submitted.
- Blood specimens must be collected in ten-milliliter gray-top tubes containing Sodium Fluoride and Potassium Oxalate preservatives (TOX Figure 4).



**TOX Figure 4:** Proper collection of postmortem specimens.

➤ All other postmortem specimens should be collected in 90-milliliter yellow-top plastic containers, with the exception of blood specimens collected for Carbon Monoxide testing (TOX Figure 4).

➤ Blood collected for Carbon Monoxide testing must be collected in a properly labeled green-top glass jar. The blood specimen must fill the jar as completely as possible to eliminate the amount of headspace (TOX Figure 5), and the specimen must be submitted to the OCME Toxicology Laboratory as soon as possible.



**TOX Figure 5:** Proper collection of blood submitted for Carbon Monoxide testing.

➤ Each specimen tube/container must be properly labeled with the following minimum information:

- Specimen type
- Decedent's name
- OCME case number
- Date of examination
- Type of examination (autopsy or inspection)

➤ Each specimen tube/container must be closed completely to prevent leakage during transfer.

➤ All specimen tubes/containers related to an individual case must be placed together into one secondary, biohazard, plastic bag before submission to prevent leakage.

- The Toxicology Request Form must be completed with the following minimum information:
  - First and last name of deceased (or appropriate notation if unidentified)
  - OCME case number
  - Assigned medical examiner
  - Assigned investigator
  - Date of death
  - Date and time of examination
  - Type of examination (autopsy or inspection)
  - Classification of case
  - Indication of biohazard or decomposed
  - Brief history of case
  - Cause of death and suspected drugs, when available
  - Demographic information
  - Age, sex, race, height, and weight of deceased, when available
  - Identity and quantity of specimens submitted
  - Description of drug paraphernalia (or other evidence) submitted
  - Toxicological analyses requested
- A photocopy of the Toxicology Request Form must be provided if the original becomes contaminated with biological fluids.
- The appropriate Chain of Custody section of the Toxicology Request Form must be completed by whomever releases the evidence from the Southern OCME.
- Postmortem specimens must be refrigerated, not frozen.



# **CONTROLLED SUBSTANCES LABORATORY**

## **LABORATORY SCOPE**

- To examine material for the presence of controlled substances and drugs
- To assist with clandestine laboratory scene processing/assessment by providing OCME laboratory chemists familiar with clandestine laboratory chemicals, and/or referral to the appropriate local representative of the Drug Enforcement Administration (DEA) in Delaware

## **TYPES OF EVIDENCE ANALYZED INCLUDES:**

- Drug material (e.g. plants, vegetative matter, powder, tablets, liquid, paper, etc.)
- Drug paraphernalia, only if it is suspected to contain controlled substances residues requiring analysis
- Other items suspected of containing controlled substances or drugs

## **IMPORTANT CONSIDERATIONS**

- Evidence removed from a body cavity, including suspect's mouth, must have a "BIOHAZARD" warning placed on the outside packaging to appropriately warn the analyst.
- If fingerprint examination is required on the inner packaging or other pieces of evidence, it must be done prior to submission of evidence for drug testing.

## **COLLECTION AND SUBMISSION OF CONTROLLED SUBSTANCE (CS) EVIDENCE**

- Drug-related evidence that is found commingling in a large container must be packaged together, as there is no need to separate the items. These items should be listed separately under the same evidence/exhibit number on the DE-OCME FE150 form.

- CS evidence recovered separately must not be packaged together in order to avoid cross-contamination. These items should be listed as separate evidence/exhibits on the DE-OCME FE150 form.
- Used drug field-test kits must never be submitted.

### **Tablets, Capsules, and Prescription Medication Evidence**

- Tablets, capsules, or other prescription medications must be itemized separately on the DE-OCME FE150 form if they are different in appearance, origin, etc., unless they are found in the same container or location. If the tablets, capsules, or other prescription medications are found in different locations, they must receive different evidence/exhibit numbers. If found commingling, they should be listed under the same evidence/exhibit number.
- The number and type (e.g. color, size, markings, etc.) of tablets, capsules, or other prescription medications submitted for analysis must be indicated on the DE-OCME FE150 form .
- Unopened, commercially-sealed bottles or containers of tablets, capsules, or other types of prescription medications must not be opened for counting or visual description.
- The DE-OCME FE150 form must include a minimum of the following:
  - The specific charge(s) must be entered on the “Offense” line.
  - Either the drug name (e.g., marijuana, cocaine, heroin, etc.) or simply “controlled drug” or “controlled substance” must be entered on the “Check For” line.
  - Marijuana samples must not be referred to as “THC” or “Cannabis sativa”.

### **Marijuana Evidence**

- Fresh plant material must be dried until the leaves are crisp and all soil and other potting material must be removed from all plants prior to submission.
- The dried material must be packaged in an appropriately labeled paper bag. Plastic bags must never be used to package fresh plant material, since it may become degraded, destroying the evidence. Dangerous mold spores may also be produced (CS Figure 1).





**CS Figure 1:** Improper packaging of fresh plant material.

- Cases involving whole plants submitted to the OCME CS Laboratory must include pre-arrangements with the Controlled Substances Laboratory Manager.
- It is up to the discretion of the submitting agency to determine whether they will be submitting a representative sampling of plant material from the crop or if entire plants will be submitted. The decision will be based on the jurisdiction and the charges filed for each case.
- **Seeds and/or germinating seeds or mature plant stems devoid of leaves will not be accepted for analysis at the OCME.**

### **Marijuana Terminology**

- A *sampling* consists of a representative cutting taken from the seized plant material.
- An *entire plant* indicates that the roots are submitted and are still attached to the stalk, leaves, and bud portion of the plant.
- A *seedling* refers to the small, fragile plant with leaves that is only a few inches in height and is no longer attached to the seed hull.
- A *germinating seed* refers to a seed from which a white root has started to form, but fully developed leaves are not present. These are not seedlings.

### **Lysergic Diethylamide (LSD) Evidence**

- Suspected LSD samples must be protected from light, since it will cause deterioration of any LSD that may be present in the exhibit. This can be accomplished by submitting the exhibit in an appropriately labeled brown paper bag or manila envelope.
- Sheets of perforated paper suspected of containing LSD must be left intact. The total number of “hits” (individual perforated squares) contained in the evidence/exhibit must be indicated on the DE-OCME FE150 form.

### **Liquid Evidence**

- Liquid evidence/exhibits must be sealed in glass, not plastic, containers, preferably with Teflon-lined caps that are leak-proof. The evidence envelope must be properly padded to prevent breakage and properly labeled to indicate the presence of glass contents.
- Liquid evidence/exhibits retrieved from toilets or other sources must be submitted in quantities no larger than approximately one-pint containers. Any particulate matter or undissolved powders or material must be included with the liquid samples as a separate evidence/exhibit in another glass container.

### **Charred Evidence**

- Partially-charred cigarettes and/or cigars must be separated from the ashes and submitted for analysis. The contents of ashtrays containing ashes and charred materials will not be accepted for analysis by the OCME.
- Pipes, glass tubes, and other forms of homemade smoking apparatuses containing partially charred residues are acceptable for analysis. The suspected drug (e.g. marijuana, cocaine base, PCP, etc.) must be indicated on the DE-OCME FE150 form.

### **Suspected Anabolic Steroid Evidence**

- Partially-used bottles of suspected liquid injectable steroid evidence/exhibits must be carefully sealed to prevent leakage.
- Homemade mixtures of steroids are commonly encountered and provide

analytical challenges in identification. Therefore, as much information as possible must be included on the DE-OCME FE150 form about the possible identification of these pieces of evidence/exhibits from information derived at the scene including notes, hand-written labels, or discarded manufacturer labels.

### **Drug Paraphernalia Evidence**

- Pipes, spoons, scales and other types of drug paraphernalia may contain trace quantities of drugs for analysis. As such, they should be packaged properly to prevent contamination unless they are found in contact or mixed with other drug evidence.
- The water from water pipes must be removed and must not be submitted to the OCME CS Laboratory.
- Only a representative sample must be submitted for analysis if multiple pieces of evidence/exhibits are suspected of containing trace amounts of the same drug and are part of the same case.
- Syringes will **not** generally be analyzed by the OCME CS Laboratory if other evidence in a case is available. Prior approval from the OCME CS Laboratory Manager must be obtained for **any** syringe drug examination.
- With proper authorization, hypodermic syringes with needles may be submitted. They must be packaged in a sharps-proof container, labeled "Warning: Syringe Needles". The outer packaging must also be labeled with a "BIOHAZARD" warning, and the DE-OCME FE150 form must clearly depict that a needle is present in the evidence/exhibit.
- For exposed needles, the needle should be stuck in a cork, by placing the cork on a hard flat surface and carefully pushing the needle into it. Never attempt to cap or cover the needle by holding the cap or cork in your hand.

### **PACKAGING AND LABELING OF CS EVIDENCE**

- All evidence must be properly sealed upon submission.
- Evidence must be packaged in approved controlled substances envelopes.
- Controlled substances envelopes containing a cellophane window must be evidence-tape sealed around all edges where cellophane and package meet.
  - Any controlled substances submitted in clear plastic bags (large or small) must be sealed with evidence tape, including "**self-sealing**" bags.

- All controlled substances must be submitted in the most reasonably sized envelope for the exhibit.
- All outer-edge openings must be completely sealed with clearly-marked evidence tape.
- The collecting officer responsible for initially packaging the material must initial and date across the evidence tape, at the point where it meets the package.
- Outer packaging must be clearly and legibly labeled with the following minimum information:
  - Suspect's name
  - Complaint number
  - Submitting agency
  - Date of offense
  - Arresting officer
  - A description of contents that includes the number and types of suspected controlled substances or drugs
- Sharp or pointed objects (e.g. needles, syringes, etc.) must be placed in an approved sharps container following the "Sharps Evidence" guidelines (page 13) prior to being placed in an outer package for submission.
- Packaging must be sufficiently secure to prevent cross-contamination between different exhibits.
- If collecting and submitting officers do not have approved containers available through their agency, they may be obtained from the Forensic Evidence Specialist at the OCME upon arrival.
- The submitting officer must re-package any evidence in the presence of a Forensic Evidence Specialist prior to submission.
- The Forensic Evidence Specialist may refuse any improperly packaged and/or sealed evidence.

### **Evidence Destruction by the OCME**

- The OCME performs **drug destruction** every three to six months.
- Agencies must submit a written request for destruction to the OCME upon completion of all court action pertaining to the case.
- The request letter should include a minimum of the following information:
  - OCME Laboratory number
  - Agency Complaint number
  - Names of all the defendants in the case
  - Written statement that it is acceptable to destroy the evidence
- Upon receipt of the request letter, the OCME will obtain the court order authorizing destruction.
- The OCME will send the “Return Certifying Disposition of Evidence” form to the agency after the drugs have been destroyed.



# **ARSON LABORATORY**

## **LABORATORY SCOPE**

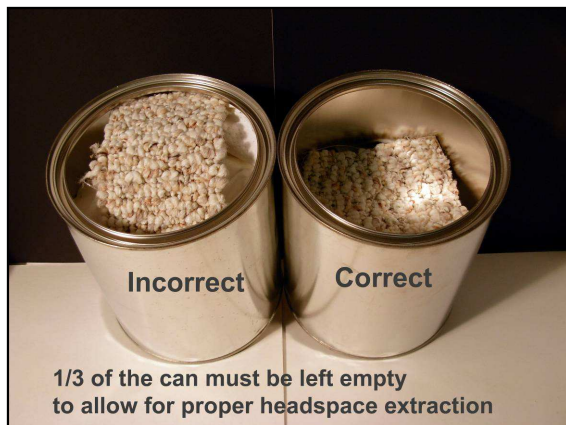
- To perform analysis of Fire Debris and associated liquids for the presence of Ignitable Liquids (possible Arson)
- The OCME Arson Laboratory does not perform analysis on fragments of detonated explosive devices or explosive chemicals/components. The Bureau of Alcohol, Tobacco and Firearms (ATF) is the agency to contact for these analyses.

## **SUBMISSION AND ACCEPTABILITY OF ARSON EVIDENCE**

- Arson evidence is any fire debris or liquid sample that is relevant to the origin, cause, spread and motive of the fire.
- When making an Arson submission, discuss the type, quantity and quality of the evidence to be submitted.
- Pre-approval for Arson evidence submissions is not necessary, but Arson evidence must be accompanied by a Letter of Submittal, Initial Crime Report, an Evidence Summary Sheet, and Narrative.
- Any odors or other signs that indicate the possible type of ignitable liquid used at the scene should be documented in the submitted narrative.
- Fire Debris Evidence must be submitted in a timely manner (ideally within two weeks of the collection date) to ensure the integrity of the container (metal cans may corrode over time) and the evidence.
- The OCME Arson Laboratory does not routinely accept shoes for fire debris analysis, since shoes frequently share the same petroleum-based origin as many accelerants.
- Soil samples must be either refrigerated or frozen before and after submission. This ensures the integrity of any hydrocarbons that may be present.
- Each piece of evidence/exhibit must be clearly labeled to correlate with the paperwork submitted.

## **COLLECTION AND PACKAGING OF ARSON EVIDENCE**

- Improperly packaged evidence will not be accepted.
- The evidence must be sealed tightly to eliminate the escape of any volatiles.
- Evidence submitted for arson analysis must be placed in either a non-coated metal can (preferable) or glass container with a metal screw-cap.
- The debris must not fill more than two thirds of the evidence container (Arson Figure 1) to ensure sufficient headspace for sampling.



**Arson Figure 1:** Incorrect and correct collection of arson evidence.

- Paper and plastic must not be used for sample collection, since vapors can escape through these materials.
- Polystyrene or polyethylene bags and caps (e.g. coffee cans) must never be used for sample collection, since they may be permeable to some hydrocarbons submitted as evidence.
- Plastic caps or containers with rubber seals or stoppers must never be used for sample collection, since gasoline and other commercial volatile products can dissolve the closure.
- Disposable, plastic, or latex gloves must be worn when collecting evidence and must be discarded and changed between evidence/exhibits. Care should be taken to ensure gloves and evidence labels do not inadvertently wind up in evidence cans along with the debris.
- Collection tools such as brooms, trowels, scoops, and brushes must be cleaned with a grease cutting detergent (e.g. Dawn or Palmolive) followed by a good stream of running water between sample collections and between scenes.



➤ Absorbents such as calcium carbonate, lime, diatomaceous earth, or non-self-rising flour (refrigerate this) may be used for the collection of arson evidence from concrete surfaces. Spread the absorbent over the area of interest and allow to stand for 20 to 30 minutes. Collect evidence with a clean brush or putty knife, and transfer to a clean, metal evidence can. A comparison sample of the absorbent must be submitted in a clean, same-sized evidence can.

### **Metal Cans**

- Fire debris must be submitted in either a lined or unlined properly sealed metal can that is similar in size to the debris that is collected.
- When an agency opens a new lot of cans, a sample can must be sent to the OCME Arson Laboratory for testing to ensure that it is free of contaminants.
- Agencies that rarely submit fire debris evidence may alternatively submit a clean, empty, same-size can with each new case for testing to ensure that it is free of contaminants. The clean, empty can must be from the same source as the cans used for the evidence. If different sizes of cans are used in collection, a clean can of each size used must be submitted.
- Clean metal cans should be stored by the agency with care, ideally inside another container such as a Rubbermaid type storage box to avoid contamination. This is particularly important if storage is in the trunk of a vehicle where there may be traces of gasoline or diesel fumes.
- Rusted cans or cans with holes will not be accepted.
- Metal cans must not fill more than two-thirds of the evidence container (Arson Figure 1) to ensure sufficient headspace for sampling.
- Cans that are packaged to the top will result in the evidence being returned to the agency for repackaging, along with an explanation of why the evidence was refused.
- Evidence items such as bulky clothing and towels may require cutting and submitting in more than one can.

### **Glass Containers**

- Liquid evidence must be submitted in a container suitable for volatiles. Liquids should not be added directly into a metal can for submission.
  - It is preferred that liquid evidence be submitted in its original container.

- If this is not possible (e.g. the original containers melted), the sample must be transferred into a glass container using a clean disposable pipette. Appropriate glass containers include glass jars, bottles, test tubes, or vials with Teflon-lined caps. Bakelite is not an acceptable cap because it is poly-vinyl with a paper liner.
- Glass containers must be protected with padding and then placed in an unbreakable container such as a metal can.
- Any information contained on the label of the original container must be included on the label of the container to be submitted (e.g. manufacturer contents, lot number, warnings, etc.).

### **Other Containers**

- Special evidence bags (e.g. nylon bags manufactured by Grand River) are also acceptable.
- An empty nylon bag must also be submitted as a comparison sample.

### **Comparison Samples**

- Known and comparison samples are mandatory, especially with building materials or upholstery materials (Arson Figure 2).



**Arson Figure 2:** Example of comparison carpet samples submitted for arson testing.

- Known samples include liquids suspected of being used to start the fire (e.g. containers found at or near the fire scene).

- Comparison samples include unburned materials at the scene used for comparison to burned samples submitted for analysis (e.g. wood, carpet, linoleum, etc.).
- Comparison samples are not guaranteed to be free of ignitable liquids that may have been used as an accelerant. Only a true control sample from the manufacturer can ensure that.
- If swabs or plain gauze (i.e. no sticky backing) are used for evidence collection from melted plastic or concrete, a clean gauze pad or swab is required, and must be submitted in a separate container that is the same size as the evidence.

### **References**

- 1) Kirk's Fire Investigation 4<sup>th</sup> edition John De Haan
- 2) Laboratory Analysis of Fire Debris Evidence- Explosives Unit FBI Lab (training class manual)
- 3) "In Search of the Perfect Container for Fire Debris Evidence" by Dale Mann
- 4) California Fire Marshal Officer's Association Fire Investigation Manual Unit 11

*NOTE: If there are any questions regarding proper packaging and submission of Fire Debris Evidence, please contact the Arson or Evidence Unit of the OCME at (302) 577-3420.*



# ***SUSPECTED HUMAN REMAINS***

## **COLLECTION AND SUBMISSION OF ANTHROPOLOGICAL EVIDENCE**

- Anthropological evidence may be found during excavations of yards for septic systems, or new housing construction often turns up old bones or an old burial site.
- Anthropological examinations reveal if the bones are human or animal and can determine the race, sex, approximate height and age of the individual from which they came.
- The OCME has legal jurisdiction over human remains and suspected human remains. As such, if suspected human remains are located, any further excavation or retrieval must be ceased, and the OCME must be contacted immediately for consultation and assistance. A forensic death investigator will be assigned and promptly respond to the scene.
- Insects found on the remains must be collected and placed in film vials with air holes.
- Insects must not be killed until a consultation with the OCME can be made, since larvae may be needed to be raised to the adult stage in order to determine the estimated time of death, cause of death, and location (primary or secondary site if the body has been moved) of death.

## **COLLECTION AND SUBMISSION OF SOIL EVIDENCE FROM BURIAL SITES/EXCAVATIONS**

- The OCME will send soil evidence requiring analysis to the FBI for examination.
- Soil can be transferred to clothing, footwear, tools, automobiles, and other pieces of evidence. Physical examination of soil may include color, particle size, distribution, density gradient, mineral content, and organic content.
- Soil can vary dramatically at a crime scene, making it necessary to collect the samples as soon as possible.
- Film canisters or similar containers must be used to collect several, representative samples around the area of interest.
- Soil samples from entry and escape routes must also be collected.

- Only the topsoil layer must be collected, unless an excavation (e.g. grave-site, etc.) is involved.
- The soil sample must be air dried prior to submission to the OCME. If wet samples must be submitted, the outer packaging must be properly labeled to indicate that samples are wet and will need to be dried after submission.
- When appropriate, collect “alibi” samples (e.g. for use in those cases in which the suspect offers an explanation as to the source of the questioned soil noted on their shoes).
- Soil adhering to footwear or tools must not be removed. The shoe or tool with the soil must be submitted as is.
- A map identifying soil sample locations must be submitted along with soil evidence.

## **VENDOR LIST**

The following vendors can be contacted for catalogs, availability of items, and price quotes for evidence and crime scene processing supplies:

<b>Supplier</b>	<b>Website</b>	<b>Telephone</b>
Ace Fingerprint Inc.	<a href="http://www.acefel.com">www.acefel.com</a>	(800) 426-7072
Criminal Research Products	Email: <a href="mailto:crpinc@aol.com">crpinc@aol.com</a>	(800) 635-5225
ECPI, Inc.	<a href="http://www.crime-scene.com">www.crime-scene.com</a>	(800) 953-3274
Evident	<a href="http://www.evidentcrimescene.com">www.evidentcrimescene.com</a>	(800) 576-7606
Evi-Paq	<a href="http://www.evipaq.com">www.evipaq.com</a>	(800) 377-0450
Kinderprint Co., Inc.	<a href="http://www.kinderprint.com">www.kinderprint.com</a>	(800) 227-6020
Lightning Powder Co.	<a href="http://www.redwop.com">www.redwop.com</a>	(800) 852-0300
Lynn Peavey Co.	<a href="http://www.lynnpeavey.com">www.lynnpeavey.com</a>	(800) 255-6499
ODV, Inc.	<a href="http://www.odvinc.com">www.odvinc.com</a>	(800) 422-3784
Sirchie, Inc.	<a href="http://www.sirchie.com">www.sirchie.com</a>	(800) 356-7311

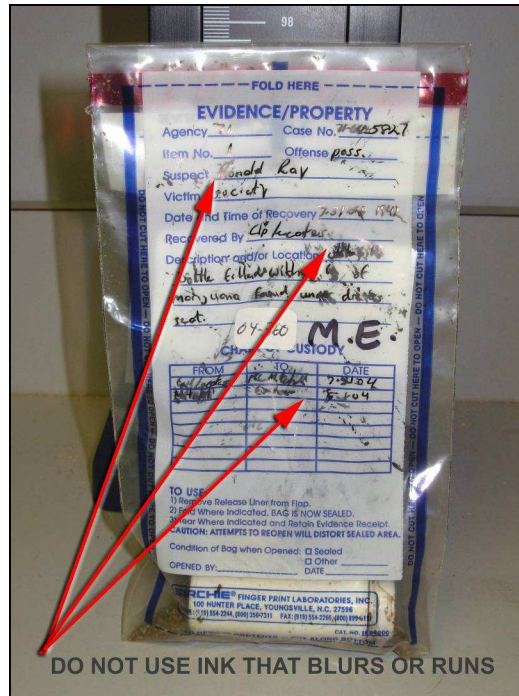




# APPENDIX

## General Rules and Notes for Packaging and Sealing Evidence

1) Do not use ink that will blur or run for labeling evidence.

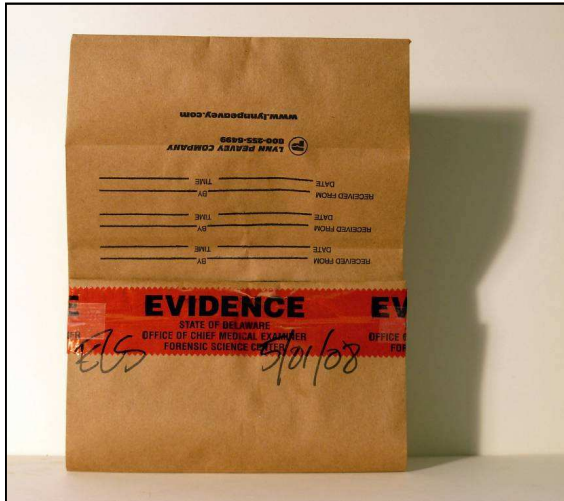


2) Never use staples to seal evidence.



3) Evidence tape must be placed across the entire opening of the package. The OCME prefers the collecting officer to hard write initials/date/time notations across the seal, but will accept initials only.

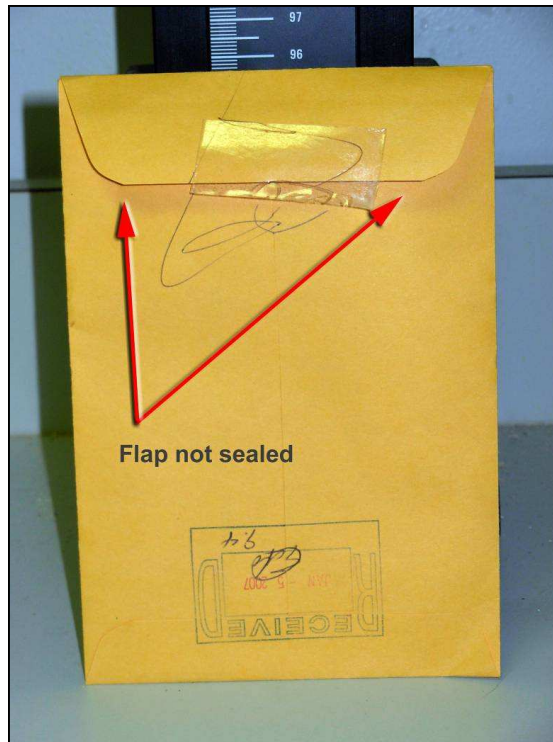
### Correct Sealing of Evidence



### Incorrect Sealing of Evidence



### Incorrect Sealing of Evidence

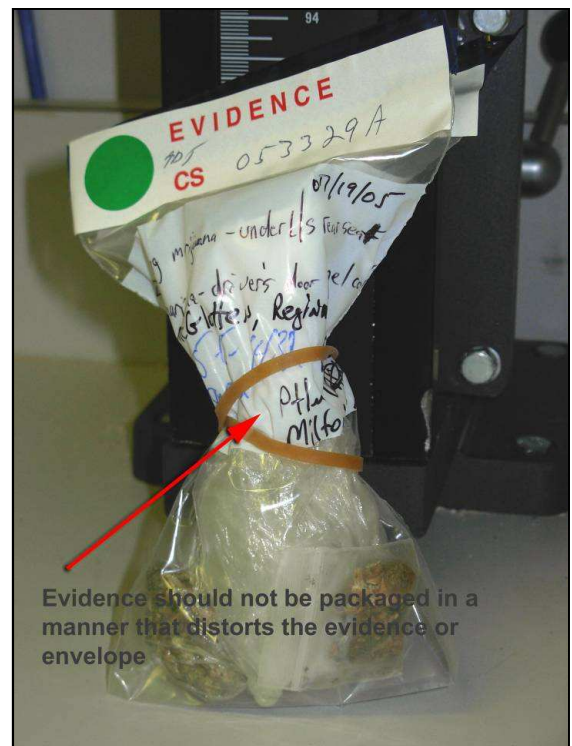




- 4) Do not over-pack bags of evidence with evidence that is too large or too heavy for the bag. This leads to distortion and tearing of the packaging.



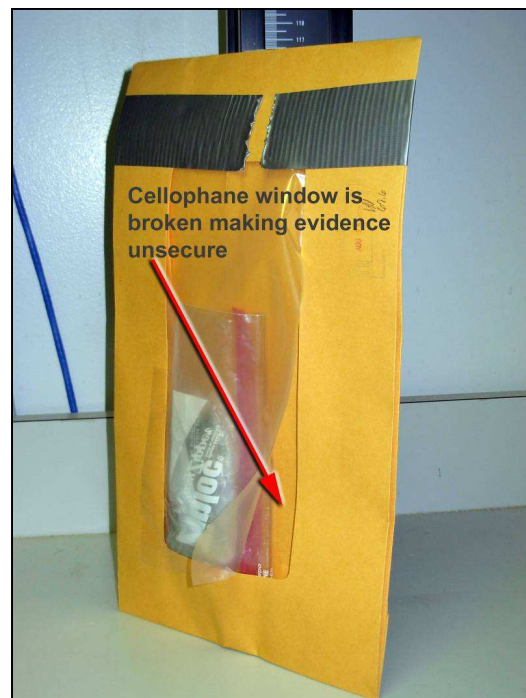
- 5) Do not package evidence so that the bag and/or evidence becomes distorted.



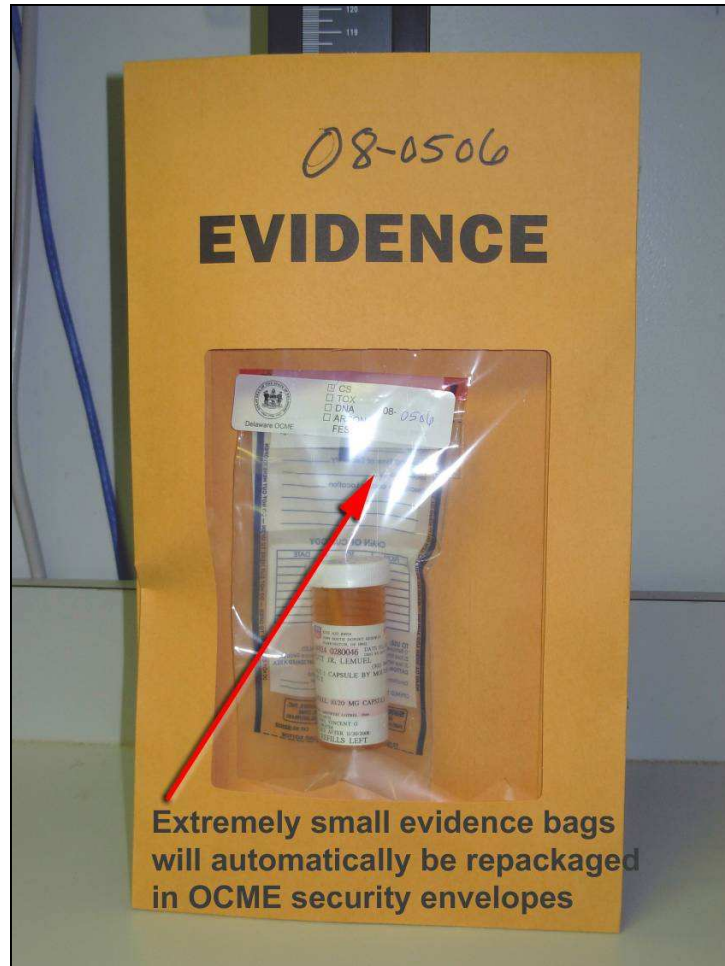
**6) Package unusually shaped evidence items in boxes; do not use envelopes for packaging.**



**7) When packaging in envelopes with cellophane windows, ensure that the window and its seams are secure and intact.**



8) Extremely small evidence bags will be repackaged by the OCME Forensic Evidence Specialist into an OCME security envelope.



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