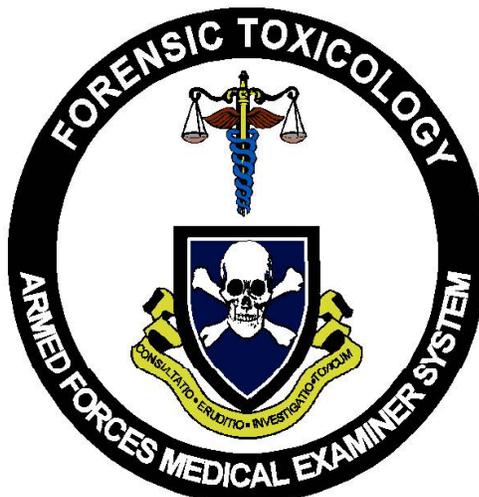


**DIVISION OF FORENSIC TOXICOLOGY
ARMED FORCES MEDICAL
EXAMINER SYSTEM**



**GUIDELINES FOR THE COLLECTION AND
SHIPMENT OF SPECIMENS FOR
TOXICOLOGICAL ANALYSIS
APRIL 2012**

****changes effective May 1, 2013**

****Email contact address has changed to:
usarmy.dover.medcom-afmes.mbx.fortox@mail.mil**

Shipment Address for all specimens:

**Division of Forensic Toxicology
Armed Forces Medical Examiner System
Building 115 Purple Heart Drive
Dover AFB, DE 19902
(weekend deliveries are not accepted)**

Commercial: (302) 346-8724, DSN: 366-8724

Fax: (302) 346-8822 or DSN 366-8822

****e-mail: usarmy.dover.medcom-afmes.mbx.fortox@mail.mil**

<http://www.afmes.mil>

****Note: Updated email address**

AFMES - Division of Forensic Toxicology

2012 Sample Submission Guidelines

Mission:

The Division of Forensic Toxicology (DFT), Armed Forces Medical Examiner System (AFMES) is located at Dover AFB, DE. It is the Department of Defense's primary forensic laboratory for performing full spectrum toxicological analysis for: 1) non-fatal Class A, B and C military aircraft, ground and ship (sea) mishaps (hereinafter referred to as incidents) 2) military aircraft, ground and ship (sea) accidents involving fatalities 3) select military autopsies 4) biological specimens from AFOSI, CID and NCIS criminal investigations 5) blood alcohol and drug tests in DUI and DWI medicolegal evaluations 6) blood and urine in fitness-for-duty inquiries and selected forensic cases of national interest.

Case Chain of Custody Documentation:

AFMES Form 1323, (rev November 2011, AFMES/Division of Forensic Toxicology-Toxicological Request Form) must be included with each case submission and is available at <http://www.afmes.mil>. Complete and submit **one** form for each member (see *Attachment 2 sample*) and provide all available details pertaining to the incident/accident, this will assist the toxicologist in selecting the appropriate testing to perform. The completed and signed AFMES Form 1323 and other case relevant forms should be sealed in a separate polyethylene bag. Paperwork should be carefully printed or typed. **Again, we cannot overemphasize the importance of establishing chain-of-custody documentation with a properly completed AFMES Form 1323 form.**

Failure to submit an AFMES Form 1323 will delay processing, may result in an incomplete analysis of the submitted specimens or return of specimens to the contributor, and may cause test results to be forwarded to the wrong address.

DO NOT leave items blank on the AFMES Form 1323. All blocks request information critical to case processing. The most commonly neglected areas include: return address block & incident details.

Forensic Cases with no Fatalities (Aircraft, Ground & Ship):

To ensure integrity of sample collection, direct observation and documentation of the sample collection (i.e. name of observer, date/time of collection) should be maintained by the submitting command.

Minimum specimen requirements for submission:

BLOOD:	14 mL NaF (gray top) tubes
	7 mL EDTA (purple top) tubes
URINE:	50 mL - 70 mL (no preservative)

DO NOT USE - SST/CORVAC/Tiger Top tubes for blood collection. The serum-separating gel has been shown to absorb certain classes of drugs. Hand-mix the blood after collection and forward all specimens to our laboratory after properly labeling each tube or container with the name and SSN of the individual from whom the samples were collected. Send all samples collected; do not delay the entire shipment if the urine container(s) and/or blood tube(s) contain less than the optimal amounts. It is not necessary to refrigerate or chill samples during shipment.

Forensic Cases with Fatalities (Aircraft, Ground, Ship and Routine Autopsies):

In order for the Division to furnish accurate and meaningful toxicological analyses, it is strongly recommended that the following fluid and tissue volumes/weights be submitted for testing:

Blood:	All available up to 100 mL (indicate source)
Urine:	100 mL (no preservative)
Bile:	All available
Vitreous:	All available
Liver:	100 grams
Brain:	100 - 200 grams
Kidney:	50 grams
Lung:	50 grams
Gastric:	50 grams

- 1) For patients who survive and later expire during a hospital stay, it can be extremely beneficial if the contributor can furnish any antemortem samples (often stored in a clinical laboratory's refrigerator) along with the postmortem samples. Clearly label the source of all samples (e.g., heart blood or peripheral blood) and clearly differentiate antemortem from postmortem specimens. In addition, list the date and time when the specimens were collected.
- 2) Prompt collection of specimens is essential to prevent contamination and degradation. All specimens should be refrigerated as soon as possible. ***NO ONE***, under any circumstances, should attempt collection of blood, urine or bile by needle puncture if an autopsy is to be performed. Such attempts may result in unsuitable toxicology specimens and contaminate crucial evidence such as body wounds, markings and other prominent features.
- 3) Excellent specimens can easily be obtained at autopsy. The pathologist should select the toxicology samples and have his or her assistant(s) prepare containers or tubes beforehand. For accidents involving fragmentation of two or more bodies, the flight surgeon and/or pathologist must ensure that the fragments are properly identified before being submitted as specific individuals. If this cannot be guaranteed, specimens must be labeled as commingled remains.
- 4) If no fluids or organs can be recovered, 100 grams of muscle (psoas, perispinal or deep thigh preferred), and/or fat and red bone marrow can be submitted. In severe crush injuries, the gallbladder will often remain intact, permitting bile collection. Even in the most severely burned or fragmented cases, valuable information can often be obtained from only a few grams of dried blood or tissue (esp. spleen). If in doubt, submit as much tissue as is practical; **do not submit fixed tissue for toxicological analysis**. All specimens must be labeled with the sample type, decedent's name, autopsy number and complete SSN. A properly completed AFMES Form 1323 (see *Attachment 1*) **must** be submitted with each fatality or Medical Examiner case.

Forensic Investigative Cases:

The following types of cases may be submitted to the Division for toxicological analysis; they will be classified as “investigative”:

- 1) **criminal investigations** (AFOSI, CID, NCIS and base security forces)
- 2) **legal blood alcohol testing** (BAC's) from DUI/ DWI, sexual assaults
- 3) **fitness-for-duty testing**

Analyses routinely performed for these cases include:

- **Volatiles:** ethanol, methanol, acetone, huffing agents and other volatile compounds
- **Drugs of abuse:** complete drug screen for commonly abused compounds is available upon request; if use of a specific drug is known or suspected, analysis for that drug should be specifically requested
- **Synthetic cannabinoids:** (Spice, K2 etc) testing for these compounds are only performed as part of an active criminal investigation. Submissions must include the investigation number (ROI) in addition to the urine sample.
- **Anabolic steroids:** We **do not** test for these compounds. Analysis for these agents must be coordinated through your Service drug testing laboratories.

Minimum specimen requirements for submission:

BLOOD:	14 mL NaF (gray top) tubes 7 mL EDTA (purple top) tubes
URINE:	50 mL - 70 mL (no preservative)

DO NOT USE - SST/CORVAC/Tiger Top tubes for blood collection. The serum-separating gel has been shown to absorb certain classes of drugs. Hand-mix the blood after collection and forward all specimens to our laboratory after properly labeling each tube or container with the name and SSN of the individual from whom the samples were collected. Send all samples collected; do not delay the entire shipment if the urine container(s) and/or blood tube(s) contain less than the optimal amounts. It is not necessary to refrigerate or chill samples during shipment.

To ensure integrity of sample collection, direct observation and documentation of the sample collection (i.e. name of observer, date/time of collection) should be maintained by the submitting command.

Forensic Sample Packaging and Shipment:

Non-Fatal Mishap and Investigative Specimen Packaging:

Specimens should be collected into the appropriate polyethylene bottle (urine) or glass vial (blood). Samples should be shipped in sufficiently sturdy boxes with individual samples containers wrapped in heat-sealed or zip-loc bags with adequate absorbent material to contain leakage. Package blood and urine separately and **do not** freeze. Paperwork should be sealed in a separate plastic bag. Place specimens and paperwork for each case in another larger heat sealed or zip-lock plastic bag. Each large bag will **only** contain specimens from **one** individual (do not package more than one set of patient specimens in each bag). Please ensure packaging is compliant with IATA Packing Instruction 650 detailed in Figure 2.

*Note that failure to submit a properly completed AFMES Form 1323 will delay processing, may result in an incomplete analysis, return of specimens or may cause test results to be sent to the wrong address.

Post-Mortem Sample Preservation and Packaging:

Urine and blood specimens should be collected into the appropriately labeled polyethylene bottle (urine) or glass vial (blood). Other bodily fluids should be placed in tightly closed, screw-cap polyethylene containers and must be labeled with the specific contents: decedent's name, autopsy number and SSN. Permanent markers are very useful for this purpose. Care must be taken to avoid contamination of the specimens with solvents that may be found in some inks, formalin-fixed tissue, alcohol, disinfectants or deodorants. Make sure each tissue sample is individually packaged, since drug distribution studies of different organs often provide critical information concerning drug use and potential toxicity. Chemical fixatives, such as formalin, embalming fluids, etc., cause interference with toxicological analyses; **do not submit fixed tissues for toxicological analysis.**

Freezing with dry ice is the method of choice for preserving tissue. It is imperative that each specimen and its accompanying paperwork are all **individually** packaged to prevent cross contamination upon thawing.

A large polyethylene bag should be used to keep all specimens and forms from specific individuals together. Frozen tissue(s) and body fluid(s) must be packed in an insulated shipping container large enough to hold the specimens plus a quantity of dry ice approximately **3 times** the weight of the specimens. When using dry ice in shipping containers, use containers that allow CO₂ gas from melting dry ice to escape (Dry ice must not be placed in thermos bottles). Glass, fluid containers or tissue bags should **not** be allowed to come in direct contact with the dry ice.

Specimen Shipment:

The AFMES Form 1323 and any other pertinent paperwork should be placed in a separate, sealed plastic bag and placed **inside** the specimen shipping box. Do not include the AFMES form 1323 with other shipping documents affixed to the outside of the shipping box.

The shipment **MUST** be sent via an express mail service such as FedEx®, DHL, U.S. Express/Priority Mail or U.S. Second-Day Mail. Packages must be shipped so that they arrive at the AFMES on a weekday, Monday through Friday, **weekend deliveries are not accepted.** For insurance purposes, assign a monetary value of \$100.00 or less for all diagnostic samples. **Do not** send package(s) by Registered, Certified, Air Freight, or "Return Receipt Requested" as this will cause significant delays in the delivery of the specimens.

Mailing Address:

Please use the following address for all submissions:

Division of Forensic Toxicology
Armed Forces Medical Examiner System
Building 115 Purple Heart Drive
Dover AFB, DE 19902

Packages must be shipped so that they arrive at the AFMES Monday through Friday. Weekend deliveries are not accepted.

YOU MUST label the outside of the package with (2) phrases: **“Clinical/Diagnostic Specimens Enclosed”** and **“Shipment complies with U.S. domestic and IATA international packaging regulations.”**

The term “Biohazard” should **not** appear on the outside wrapping of the package. Refer to the Domestic Mail Manual - sections CO23.8.4 through CO23.8.10 for complete instructions.

Communication with Division of Forensic Toxicology:

Division of Forensic Toxicology (Dover AFB, DE) Voice and VoiceMail:

Forensic Toxicology (Comm & DSN).....(302) 346-8724 or 366-8724 (DSN)

Facsimile (FAX):

Forensic Toxicology.....(302) 346-8822 or 366-8822 (DSN)

E-Mail: _____

Website: <http://www.afmes.mil> - to view and print electronic version of this SOP and/or obtain fillable Adobe Acrobat version of AFMES FORM 1323.

Helpful hints and Additional Information:

- When packaging shipments **do not** seal tubes or containers with wax or masking/scotch-tape.
- Clinical UA sample cups generally leak during shipment and are **not** recommended, use a sturdy urine container with a hard-plastic **screw-top** lid.
- Evidence tape is not required, but is acceptable.
- Absorbent Pouches, will contain most spills and meet US and international mail requirements.
- The POC (Point-of-Contact) for the submitted case should include their printed name, telephone number, FAX number, and an e-mail address to facilitate communication concerning “problem” cases in the appropriate box on the AFMES Form 1323.

- Lastly, please call for information or clarification concerning collection and shipment policies if you are unsure of what to do. It is better to temporarily delay shipment of specimens than to send specimens improperly collected, labeled, packaged, and shipped or to submit cases without the correct paperwork.

AFMES/ DIVISION OF FORENSIC TOXICOLOGY - TOXICOLOGICAL REQUEST FORM

TO:	<i>FORWARD FINAL REPORT TO:</i> (Please use complete mailing address)
	Email Address:

NAME OF PATIENT (<i>Last, First, MI</i>)	SOCIAL SECURITY #	AGE	SEX	RACE

DATE OF INCIDENT/ ACCIDENT	TIME AND DATE OF DEATH	AUTOPSY #

<i>MEDICATION HISTORY (Prescribed or administered, in patient's possession, containers found near body, etc.)</i>

SPECIMEN/ AMOUNT	SPECIMEN/ AMOUNT	SPECIMEN/ AMOUNT
1.	5.	9.
2.	6.	10.
3.	7.	11.
4.	8.	12.

<i>INCIDENT/ ACCIDENT DETAILS (Include pertinent information regarding crash site, autopsy or investigation; (e.g., What happened?)</i>

PRINTED NAME OF REQUESTER/ TITLE	SIGNATURE	DATE	TELEPHONE #:
			COMM: DSN: FAX:

CHAIN OF CUSTODY (CC)
Each individual charged with custody of specimens must complete information below (continue CC on reverse as required).

RELEASED BY	RECEIVED BY	DATE & TIME	PURPOSE OF TRANSFER
SIGNATURE	SIGNATURE		
PRINTED NAME	PRINTED NAME		
SIGNATURE	SIGNATURE		
PRINTED NAME	PRINTED NAME		
SIGNATURE	SIGNATURE		
PRINTED NAME	PRINTED NAME		
SIGNATURE	SIGNATURE		
PRINTED NAME	PRINTED NAME		
SIGNATURE	SIGNATURE		
PRINTED NAME	PRINTED NAME		

AFMES/ DIVISION OF FORENSIC TOXICOLOGY - TOXICOLOGICAL REQUEST FORM

TO:	<i>FORWARD FINAL REPORT TO:</i> (Please use complete mailing address)
	Email Address:

NAME OF PATIENT <i>(Last, First, MI)</i>	SOCIAL SECURITY #	AGE	SEX	RACE

DATE OF INCIDENT/ ACCIDENT	TIME AND DATE OF DEATH	AUTOPSY #

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PRINTED NAME OF REQUESTER/ TITLE	SIGNATURE	DATE	TELEPHONE #:
			COMM: DSN: FAX:

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SIGNATURE	SIGNATURE		
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SIGNATURE	SIGNATURE		
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PRINTED NAME	PRINTED NAME		