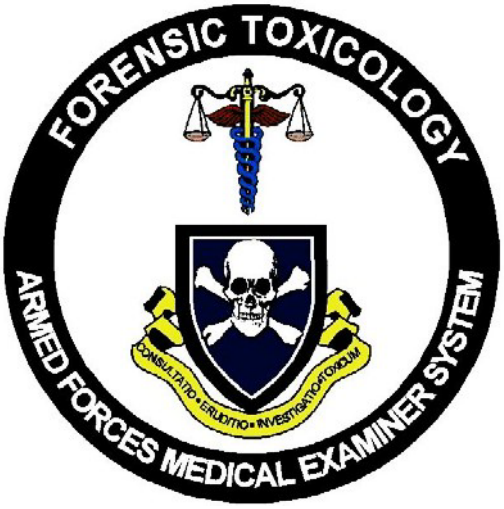
ARMED FORCES MEDICAL EXAMINER SYSTEM

DIVISION OF FORENSIC TOXICOLOGY



TOXICOLOGY SUBMISSION GUIDELINES

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To view and print the guidelines, visit the following website and look under “Publications”
https://www.health.mil/Military-Health-Topics/Health-Readiness/AFMES/Forensic-Toxicology

Version 03/2023

1. MISSION

1.1. Armed Forces Medical Examiner System (AFMES) operations are designated by Department of Defense (DoD) Instruction 5154.30 to maintain forensic medicine capabilities such as forensic pathology, forensic anthropology, forensic odontology, DNA sciences, forensic toxicology, and mortality surveillance. Within AFMES, the Division of Forensic Toxicology (DFT) is the DoD's primary forensic laboratory for performing full-spectrum toxicological analysis for:

1.1.1. Non-fatal Class A, B, and C military aircraft, ground, and ship (sea) mishaps

1.1.2. Military aircraft, ground, and ship (sea) accidents involving fatalities

1.1.3. Select autopsies of military or Federal significance

1.1.4. Biological specimens from Air Force Office of Special Investigations (AFOSI), Department of the Army Criminal Investigation Division (DACID), and Naval Criminal Investigative Service (NCIS) criminal investigations

1.1.5. Blood alcohol and drug tests in Driving Under the Influence and Drug Facilitated Sexual Assault investigations

1.1.6. Fitness-for-duty inquiries and selected forensic cases of national interest

2. CHAIN-OF-CUSTODY DOCUMENTATION – AFMES FORM 18

2.1. AFMES Form 18 (Form 18) must be included with each case submission and is available at:

https://health.mil/Reference-Center/Forms/2021/06/14/Forensic-Toxicology-Analysis-Request

2.2. Complete and submit a separate Form 18 for each case submission and provide details pertaining to the incident/accident. This will assist in categorizing the type of case and assigning the appropriate test (see section 6, below).

2.3. The completed and signed Form 18 and other case relevant forms should be sealed in a plastic bag separate from specimens. Paperwork should be legibly printed or typed. The importance of establishing an accurate chain-of-custody by proper completion of Form 18 cannot be overstated.

2.4. A point-of-contact for each case should be provided. Include printed name, telephone number, and an e-mail address in the appropriate box on Form 18. The final report will be sent to this email address.

2.4.1. The final report cannot be sent to a group email address. Please use the individual email address of the point-of-contact.

2.4.2. If a proper email address is not provided, the final report will be mailed to the point-of-contact.

2.5. Failure to submit a properly completed Form 18 will delay processing and may result in an incomplete analysis or may cause test results to be sent to the wrong address.

2.6. Requests for unique specimen handling or disposition requirements should be included with the submitted specimens. Requests must be received in writing on Form 18 or in an accompanying memorandum. This includes requests for extended specimen retention periods.

3. SAMPLE COLLECTION

3.1. Gray-top (NaF) and purple-top (EDTA) vacutainers (or the equivalent) should be used for all blood collections.

3.1.1. Mix well by inverting the collection tube a minimum of eight times.

3.1.2. Please submit as whole blood samples, i.e., do not centrifuge.

3.2. Urine should be collected in a polypropylene bottle suitable for urine collection.

3.2.1. Clinical urinalysis sample cups generally leak during shipment and are not recommended. Use a sturdy urine container with a hard plastic screw-top lid.

3.3. When packaging shipments, do not seal tubes or containers with wax, parafilm, or masking/scotch-tape.

3.4. All testing performed by the laboratory can be performed with the following minimum specimen requirements:

	Minimum	Optimal	Preferred Tube Size
NaF Blood	14 mL (gray-top tubes)	20 mL	10 mL
EDTA Blood	4 mL (purple-top tubes)	8 mL	4 mL
Urine	50 mL (no preservative)	50 mL	See 3.2

DO NOT USE SST/CORVAC/Tiger-Top tubes for blood collection.

3.5. Ensure each specimen container is properly labeled with the following:

3.5.1. Member's name

3.5.2. SSN or DoD ID number (DoD ID, preferred)

3.5.3. Collection date

3.6. Ensure identifiers from Form 18 match specimen labels.

3.6.1. For example, if DoD ID is included on Form 18, please label specimen containers with DoD ID, not SSN.

3.7. Send all samples to the laboratory as soon as possible. Refrigerate samples between collection and shipment, if possible.

3.8. Care should be taken to protect glass containers.

3.9. Follow local guidelines or policy for sample collection. Direct observation and documentation of sample collection (i.e., name of observer, date/time of collection) is preferred.

4. SAMPLE SHIPMENT

4.1. AFMES Form 18 and any other pertinent paperwork should be sealed in a separate plastic bag from specimens and placed inside the specimen shipping box.

4.2. Samples should be shipped in sufficiently sturdy boxes with individual sample containers sealed or in plastic bags with adequate absorbent material to contain leakage.

4.3. Package blood and urine separately and do NOT freeze or use dry ice.

4.4. If sending specimens for multiple individuals in one box or container, place specimens and paperwork pertaining to each individual in separate plastic bags.

4.5. Ensure packaging is compliant with IATA Packing Instruction 650.

4.6. 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 to ensure they arrive at the AFMES on a weekday, Monday through Friday. Weekend deliveries will NOT be accepted. For insurance purposes, assign a monetary value of $100.00 or less for all diagnostic samples. Package(s) by Registered or Certified mail, Air Freight, or "Return Receipt Requested" will cause significant delays in specimen delivery.

4.7. Mailing Address:

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

4.8. You MUST label the outside of the package with two (2) phrases:

4.8.1. "Clinical/Diagnostic Specimens Enclosed," and

4.8.2. "Shipment complies with U.S. domestic and IATA international packaging regulations"

4.9. The term "Biohazard" should NOT be written on the outside of the package.

5. TESTING METHODOLOGY

5.1. The following table lists analyses for which the laboratory is capable and has resources to perform:

Analysis	Scope
Volatiles	Ethanol, Methanol, Acetone, Isopropanol
Special Volatiles	Huffing agents, other inhalants
Immunoassay	Amines, Barbiturates, Benzodiazepines, Cannabinoids, Cocaine metabolite, Opioids, Phencyclidine (PCP), Lysergic acid diethylamide (LSD)
Chromatographic Methods	Screening and/or confirmatory methods for drugs of abuse, over the counter medications, prescription medications, cold and allergy medicines, designer and novel psychoactive substances (NPS), etc.
Carbon Monoxide	Total Hemoglobin, Carboxyhemoglobin
Cyanide	Cyanide
SPOTS	Acetaminophen and Salicylates

6. CASE TYPE AND TESTING ASSIGNMENT

6.1. When specimens are received, Form 18 is reviewed for completeness and additional details in order to assign appropriate testing. For this reason, it is important to provide details on Form 18. After review of Form 18, specimens are given a case type. The following lists case types, the reason for categorizing as such, and the tests associated with each type:

6.2. Aircraft Incident (AI)

6.2.1. Non-fatal Class A, B, and C military aircraft, ground and ship (sea) mishaps

6.2.2. Assigned testing:

6.2.2.1. Volatiles

6.2.2.2. Immunoassay

6.2.2.3. Blood carbon monoxide

6.2.2.3.1. Not applicable for unmanned aerial vehicle (UAV) incidents or a ground incident which does not involve a fire or does not suggest smoke inhalation.

6.3. Investigative (IN)

6.3.1. Fitness-for-duty inquiries and biological specimens from AFOSI, DACID, and NCIS criminal investigations

6.3.2. Assigned testing:

6.3.2.1. If there is no specific request for testing or details were not provided on Form 18 or there is no case history available, the following tests will be assigned:

6.3.2.1.1. Volatiles (see 6.3.3, below)

6.3.2.1.2. Immunoassay

6.3.2.2. If a specific request is made on Form 18, the DFT will only conduct corresponding analysis.

6.3.2.2.1. If testing for one specific drug is requested and the drug is part of a class of drugs or a larger testing panel, reported results will not be limited to the requested drug.

6.3.2.3. If there is a discrepancy between Form 18 and any additional documentation submitted with the case, testing assignments will be based on the more comprehensive request.

6.3.2.4. Additional broader scope chromatographic screening methods may be added at laboratory discretion based on initial screen results or case history.

6.3.3. If there is a "legal blood alcohol test (LBAT)" or similar request on Form 18 or additional documentation indicating a request for alcohol testing submitted with the case, the case will only be screened for volatiles.

6.4. Drug Facilitated Sexual Assault (DFSA)

6.4.1. Drug facilitated sexual assault investigations

6.4.2. Assigned Testing:

6.4.2.1. Volatiles

6.4.2.2. Immunoassay

6.4.2.3. GHB screen (chromatographic method)

6.4.2.4. LC-QTOF/MS general screen (chromatographic method)

6.5. Driving While Intoxicated (DWI)

6.5.1. Blood alcohol and drug tests in DUI/DWI investigations

6.5.2. Assigned Testing:

6.5.2.1. Volatiles (see 6.5.3, below)

6.5.2.2. Immunoassay

6.5.2.3. LC-QTOF/MS general screen (chromatographic method)

6.5.2.4. Synthetic Cannabinoid screen (chromatographic method)

6.5.3. If there is a "legal blood alcohol test (LBAT)" or similar request on Form 18 or additional documentation indicating a request for alcohol testing submitted with the case, the case will only be screened for volatiles.

7. CONTRACT

7.1. An agreement between the customer and laboratory is understood when specimens are assigned a case type and the associated testing scheme. If requested testing is out of date or considered inappropriate, testing will not take place until the customer has been notified. The customer will also be notified if portions of testing are cancelled. All communication will be documented through email.

7.2. All testing methodologies will be included on the final report.

8. HELPFUL HINTS AND ADDITIONAL INFORMATION

8.1. Include important case history details such as descriptions of physiological and behavioral effects of the individual (e.g., slurred speech, bloodshot eyes, inability to stand at attention, drowsiness, seizures, etc.) on Form 18.

8.2. Describe any alcohol/drug paraphernalia found at the scene of the incident, and include any statements from the subject related to the use of alcohol or drugs on Form 18.

8.3. Evidence tape is not required but is acceptable.

8.4. Absorbent pouches will contain most spills and meet U.S. and international mail requirements.

8.5. Shipping refrigerated is not required but preferred.

8.6. Lastly, 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 than to send specimens improperly collected, labeled, packaged, and shipped or to submit cases without the correct paperwork.

9. DISCLAIMERS

9.1. A similar or comparable testing methodology may be substituted at the laboratory's discretion without customer notification.

9.2. AFMES may refer specimens to a contracted third-party laboratory for additional or esoteric testing. Any external testing will be performed by an approved, certified laboratory. The third-party laboratory name and testing performed will be identified on the final report.

9.3. A complete inventory of all items received will not be listed on the final report. Only items used for testing will be included on the final report.

9.4. AFMES will store, process, retain, and dispose of submitted specimens in accordance with laboratory procedures. Details regarding laboratory procedures are available upon request from the submitter.

9.5. All items collected or created and preserved for future testing associated with a case are disposed at the same time. The retention of case specimens is determined by the case type and reported results. The specimen retention policy is outlined in the table below.

Case Type	Negative Result	Positive Result
AI, IN, DWI	60 days	2 years
DFSA	10 years	10 years

9.6. AFMES may retain specimens for use with research and development, control materials, and personnel training. Specimens will only be forwarded for these applications once disposition is completed. Requests to opt-out of these applications must be submitted in writing on Form 18 or in an accompanying memorandum.

9.7. AFMES may retain specimens beyond the routine disposition periods for litigation purposes.