

**FEDERAL RAILROAD ADMINISTRATION INSTRUCTIONS FOR
COLLECTION OF POST-MORTEM TOXICOLOGY SPECIMENS:**

RAILROAD EMPLOYEE KILLED IN A RAILROAD

ACCIDENT/INCIDENT

TO THE MEDICAL EXAMINER, CORONER, OR PATHOLOGIST:

These instructions are for the collection of post-mortem specimens as required by Federal regulations. To comply with safety regulations mandated by the Federal Railroad Administration (FRA), Title 49, Code of Federal Regulations, Part 219, a railroad representative has requested that you obtain specimens for toxicological analysis from the remains of a railroad employee who was killed in a railroad accident. The deceased employee consented to the taking of such specimens, as a matter of Federal law, by virtue of having performed service for the railroad (49 CFR 219.11(f)).

Your assistance is requested in carrying out this program of testing, which is important to the safety of both the public and railroad employees.

1. **Materials.** The railroad will provide you with one or more FRA Post-Mortem Toxicology Testing Kits. Each kit contains the materials necessary to collect specimens from one deceased railroad employee: three gray-stoppered vacuum tubes (two 10mL tubes with white labels and one 6 mL tube with a blue label) packed in a styrofoam case and a protective cardboard liner, eight single-use polypropylene containers packed in a sponge liner, two FRA collection forms (FRA F6180.73 and FRA F6180.75), three resealable plastic bags, a shipping box seal, and a mailing label pre-addressed to FRA's designated post-accident toxicology laboratory.

If these materials are not immediately available or are inappropriate in your professional judgement, please proceed using any available supplies suitable for forensic post-mortem toxicology.

2. Please Harvest all of the Specimens Requested Below:

Specimens are listed in order of preference:

- (a) **Blood** -- 20 mLs or more. Preferred sites: intact femoral vein or artery or peripheral vessels (up to 10 mL, as available) or intact heart (up to 20 mL). Deposit blood in two gray-stopper tubes (provided), mark individually by collection site, and shake to mix specimen and preservative. Identify the source of the blood on the collection form. Because of the non-uniformity of post-mortem blood drug concentrations, it is recommended that femoral venous blood be your first choice, followed by cardiac blood

from the right atrium or inferior vena cava. Note: the femoral blood specimen can be obtained after tying or clamping off the external iliac vein in the pelvis immediately proximal to the inguinal ligament.

- (b) Urine -- as much as 60 mLs, if available. Deposit into one of the polypropylene containers (provided).
- (c) Vitreous Fluid -- all available, deposited into the smallest available gray- stopper tube (6 mL tube provided). Shake to mix specimen and preservative.
- (d) If urine or vitreous fluid is not available, please collect:
 - i. Spinal fluid -- all available, in gray-stopper tube (6 mL tube provided); or if spinal fluid cannot be obtained,
 - ii. Gastric contents -- up to 60 mLs, as available, into a polypropylene container (provided).
- (e) If available at autopsy, organs -- 50 grams each of two or more of the following organs in order of preference, and as available:
 - i. liver,
 - ii. brain,
 - iii. kidney.
- f) Optional specimens of interest -- If two or more of the organs listed in (e) are not available, specimens may be taken of the following:
 - i. bile,
 - ii. spleen,
 - iii. lung.

Specimens should be individually deposited into the single-use polypropylene containers (provided).

3. **Specimen Collection**. Sampling at time of autopsy is preferred so that percutaneous needle puncturing should not be necessary. However, if an autopsy will not be conducted or is delayed, please proceed with sampling.

Blood specimens should be taken by sterile syringe and deposited directly into the tube, if possible, to avoid contamination of the specimen or dissipation of a volatile (ethyl alcohol).

Note: If only cavity fluid is available, please open the cavity to collect the specimen. Document the condition of the cavity on the collection form.

Whenever possible, please use the smallest tubes appropriate to accommodate the available quantity of fluid specimen (preferably with 1% sodium fluoride as a preservative). Please feel free to substitute your own tubes or other supplies when necessary.

4. **Specimen Identification/Sealing.** Each FRA Post-Mortem Toxicology Testing kit is intended to be used to collect specimens from a single deceased. If there is more than one railroad employee deceased, use multiple Post-Mortem Toxicology Testing kits if available.

As each specimen is collected, adhere the proper specimen identification label from the label set to the tube or bottle. Make sure the preprinted identification number on these labels matches the preprinted number on the collection form.

5. **Handling.** If specimens cannot be shipped immediately as provided below, specimens other than blood may be immediately frozen. Blood specimens should be refrigerated, but not frozen.

All specimens and documentation should be secured from unauthorized access pending delivery for transportation.

6. **Filling Out the Collection Forms.** For each deceased, complete the included specimen collection form (FRA F6180.75, Federal Railroad Administration Collection of Post Mortem Toxicology Specimens Required by 49 CFR Part 219).

Distribute copies of the Form 75 as follows:

Copies 1 and 2:	Place in the kit and ship to the laboratory.
Copy 3:	You keep.
Copy 4:	Give to the railroad representative.

The Railroad Representative will also provide you with an already-completed accident identification form (FRA F6180.73, Accident Information Required for Post-Accident Toxicological Testing (49 CFR Part 219)).

Distribute copies of the Form 73 as follows:

Copies 1, 2, & 3:	Place in the kit and ship to the laboratory.
Copy 4:	You keep.
Copy 5:	Give to the railroad representative.

7. **Packing the Shipping Box.** Place the polypropylene specimen bottles in the sponge liner designated for that purpose, place the sponge liner into one of the three resealable plastic bags provided, and seal the bag.

Place the blood and vitreous tubes in the white styrofoam case, tape the case shut, place the case into the protective sleeve, enclose the pack in the second resealable plastic bag, and seal the bag.

Place all forms in the third zip-lock bag and seal it securely. Place all three resealable plastic bags into the shipping box. Do not put the forms in the same resealable plastic bags as the specimens. Return all unused supplies in the shipping box with the specimens.

Seal the shipping box with the seal provided and initial and date across the seal. Affix the mailing label found in the Post-Mortem Toxicology Testing kit (or any appropriate address label made out to the laboratory) to the outside of the box.

8. **Shipping the Specimen(s).** The railroad must arrange to have the PMTT kit shipped overnight air express or, if express service is unavailable, by air freight, prepaid, to FRA's designated laboratory. The size and shape of the kit is specifically designed to fit within the standard currently available overnight carrier laboratory bag.

When possible, but without incurring delay, the sealed kit should be delivered by you directly to the express courier or the air freight representative if facility pick-up is available. If courier pick-up is not immediately available at your facility, the railroad representative must transport the sealed shipping box to the nearest point where air express, air freight, or equivalent shipment is available. The railroad representative need not sign the chain-of-custody form(s) in this circumstance.

9. **Other Toxicology.** FRA requests that the person collecting the specimens annotate the collection form under "Additional Remarks" if additional toxicological analysis will be undertaken with respect to the fatality. FRA toxicology reports are available to the coroner, medical examiner, or pathologist upon request.

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