

Radiological Agents: CDC Shipping Instructions for Specimens Collected from People with Potential Contamination to Radioactive Materials

SECTION ONE: COLLECTING AND LABELING SPECIMENS

Required Specimens

Ensure that each person is free, as possible, of any external contamination before providing a sample. For detailed instructions, see the Radiation Emergency Medical Management's 'Contamination: Diagnose/Manage'. Unless otherwise directed, collect the following specimens from each person who may have been contaminated:

Urine

- Collect 40 to 60 mL of urine from potentially contaminated adults and children.
- Use a screw-cap plastic container; do not overfill.
- Freeze specimen as soon as possible (-70°C or dry ice preferred).
- Note method of collection on the specimen cup if other than clean catch (e.g., obtained by catheterization).

Blanks

For each lot number of urine cups used for collection, provide two (2) empty, unopened urine cups to be used as blanks for measuring background contamination.

Labeling Specimens

- Label specimens with labels generated by your facility and follow your facility's procedures for proper specimen labeling.
- In addition to unique patient identifiers (e.g., medical records number, specimen identification number), include on the labels the collector's initials and the date and time of collection. This information is provided so that law enforcement officials may trace the specimen to the collector should investigations lead to legal action and the collector has to testify that he or she collected the specimen.
- If you use bar-coded labels, place the labels on urine cups so that, when the cups are upright, the bar code looks like a ladder.
- Maintain a list of names with corresponding specimen identification numbers at the collection site so that results can be reported to patients. It is recommended that you record additional data for use in the interpretation of results. This additional data may include time of potential radionuclide contamination, method of urine collection if other than clean catch, indication if medical countermeasures were administered prior to sample collection and indication if sample was collected postmortem.

Information provided on labels and lists may prove helpful in correlating the results obtained from the Centers for Disease Control and Prevention (CDC)'s Rapid Radionuclide Screen and subsequent analysis with the people from whom the specimens were collected.



Radiological Agents: CDC Shipping Instructions for Specimens Collected from People with Potential Contamination to Radioactive Materials

SECTION TWO: PACKAGING SPECIMENS

Biological Substance, Category B samples must be triple packaged. Packaging consists of the following three components:

- 1) primary receptacles (urine cups),
- 2) secondary packaging (materials used to protect primary receptacles), and
- 3) outer packaging (polystyrene foam-insulated, corrugated fiberboard shipper).

Inner Packaging for Urine Cups

- Separate each urine cup from the other urine cups and/or wrap individual urine cups to prevent contact between urine cups. Regardless of the method used, the first layer of secondary packaging must be secured with one continuous strip of evidence tape and initialed half on the tape and half on the first layer of secondary packaging by the person making the seal. Examples of ways to secure and mark the packaging are to
 - Pack urine cups in a gridded box (or equivalent) lined with absorbent material. Seal the top half of the box to the bottom half with one continuous piece of evidence tape and write your initials half on the tape and half on the box.
 - Individually wrap the urine cups and place in a box lined with absorbent material. Seal the top half of the box to the bottom half with one continuous strip of evidence tape initialed half on the tape and half on the box making the seal.
- Wrap the boxed urine cups, secured properly with evidence tape, with absorbent material and secure with tape. Place in the next layer of secondary packaging. An example of acceptable material is the Saf-T-Pak™ Disposable 2-Part Pressure Vessel system or its equivalent.
- Secure the closure of this secondary packaging with a single strip of evidence tape initialed half on the packaging and half on the evidence tape by the person making the seal.

Outer Packaging for Urine Cups

- Use a polystyrene foam-insulated, corrugated fiberboard shipper (may be available from your transfusion service or send-outs department).
- For cushioning, place additional absorbent material in the bottom of the shipper.
- Place a layer of dry ice on top of the absorbent material. Do not use flakes or large chunks of dry ice for shipment because large chunks have the potential for shattering urine cups during transport.
- Ensure that specimens will remain frozen or will freeze during transport.
- Place packaged urine cups in the shipper.
- Use additional absorbent or cushioning material between wrapped urine cups to minimize shifting while shipper is in transit.



Radiological Agents:

CDC Shipping Instructions for Specimens Collected from People with Potential Contamination to Radioactive Materials

- Place an additional layer of dry ice on top of samples.
- Place the urine shipping manifest in a sealable plastic bag and put the bag on top of the dry ice inside the shipper.
- Keep chain-of-custody documents for your files.
- Place lid on shipper and secure with filamentous shipping tape.

Labeling Outer Packaging for Urine Cups to be Shipped

- Place your return address in the upper left-hand corner of the shipper top and put CDC's receiving address (see Section Three for address) in the center. Include the telephone number(s) of a responsible person(s).
- Place the diamond-shaped mark UN 3373 label and the words "Biological Substance, Category B" adjacent to the label on the front of the shipper.
- Place a Class 9/UN 1845 hazard label (for dry ice or carbon dioxide, solid) on the same side of the shipper as the UN 3373 marking. Note: If the proper shipping name (either dry ice or carbon dioxide, solid) and Class 9/UN 1845 are not preprinted on the hazard label, add them in an area adjacent to the label.
 - Note the weight of dry ice (in kg) on the preprinted area of the hazard label, or place that information adjacent to the Class 9/UN 1845 hazard label.
- Note that orientation arrows are not required on a shipper containing a Biological Substance, Category B. If you use arrows, be sure to orient the inner packaging so that closures are aligned with the arrows.
- If the shipper will be transported by a commercial air carrier, complete an airway bill. On the airway bill, note the proper shipping name and UN number for each hazardous material and identify a person responsible for the shipper per International Air Transport Authority (IATA) Packing Instruction 650.



Radiological Agents: CDC Shipping Instructions for Specimens Collected from People with Potential Contamination to Radioactive Materials

SECTION THREE: SHIPPING SPECIMENS

Follow the guidance provided in your state's radiological or chemical terrorism comprehensive response plan. If you are directed to ship the specimens to CDC, please ship the specimens to the following address:

CENTERS FOR DISEASE CONTROL AND PREVENTION

CDC Warehouse

3719 North Peachtree Road

Chamblee, Georgia

30341

Phone: 770-488-7227

NCEHsamplelogistics@cdc.gov

Preparing Documentation

- Prepare a separate shipping manifest for each package shipped.
- Note on shipping manifest if urine sample was collected by means other than clean catch (e.g., catheterization).
- Place each shipping manifest (with specimen identification numbers) in a plastic zippered bag on top of the specimens before closing the lid of the polystyrene foam-insulated, corrugated fiberboard shipper.
- Do not transport chain-of-custody forms with specimens. Each entity or organization handling the specimens is responsible for the specimens only during the time that it has control of the specimens.
- Each entity or organization receiving the specimens must sign off on the chain-of-custody form of the entity or organization relinquishing the specimens to close that chain. Electronic procedures such as electronic chain-of-custody and bar-code readers will expedite this process.
- When receiving specimens, each new entity or organization must begin its own chain of custody. The entity or organization relinquishing the specimens must sign its chain of custody to close the chain and indicate that it has transferred the specimens.

Note: When the person relinquishing the specimens (relinquisher) and the person receiving the specimens (receiver) are not together at the time of specimen transfer, the relinquisher must document on its chain-of-custody form that the receiver is the express courier (e.g., FedEx, Delta Dash, DHL, UPS, USPS) and must document the shipment tracking number or have the person transporting the specimens sign the chain-of-custody form to indicate that he or she has taken control of the specimens. Likewise, when receivers get the specimens, they should document on their chain-of-custody form that the relinquisher is the express courier (and provide the tracking number) or have the person transporting the specimens sign the chain-of-custody form.



**U.S. Department of
Health and Human Services**
Centers for Disease
Control and Prevention

Radiological Agents: CDC Shipping Instructions for Specimens Collected from People with Potential Contamination to Radioactive Materials

Contact the following at CDC regarding the arrival of samples being shipped:

NCEH Sample Logistics Laboratory (IRAT): 770-488-7227

Member of Radiation Safety Team (CDC): 404-639-7233 or 404-639-3145

Coordinator, Emergency Response Branch (ERB) Laboratory : 770-488-0343

Lab Chief, Inorganic and Radiation Analytical Toxicology (IRAT) Branch Laboratory : 770-488-7990

Chief, Inorganic and Radiation Analytical Toxicology (IRAT) Branch Laboratory: 770-488-7991

Questions concerning this process should be directed to:

CDC Sample Logistics Laboratory

Inorganic and Radiation Analytical Toxicology Branch

Division of Laboratory Sciences, National Center for Environmental Health

Phone: 770-488-7227

NCEHsamplelogistics@cdc.gov



**U.S. Department of
Health and Human Services**
Centers for Disease
Control and Prevention