

# Procedure for Collecting, Packaging and Shipping Specimens Following a Chemical or Radiological Exposure Event

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Please check the website to ensure you have  
the most up to date forms and instructions.

[www.health.state.mn.us/hazmat](http://www.health.state.mn.us/hazmat)

Call the 24/7 chemical response on call phone with any questions  
and before submitting samples at: 612-282-3750

## SUPPLIES LIST

### MDH Chemical and Radiological Exposure Specimen Packing Kit Contents

- (2) “Chemical Exposure Specimen Chain-of-Custody for Blood”
- (2) “Chemical Exposure Specimen Chain-of-Custody for Urine”
- (1) “Procedure for Collecting, Packaging and Shipping Specimens Following a Chemical Exposure Event”
- (1) Gridded blood tube box
- (2) Gridded urine cup boxes
- (9) Strips of absorbent material
- (3) Clear Saf-T-Pak® “pressure bags”
- (3) White Tyvek®, Saf-T-Pak® envelopes
- (2) Zip close paperwork bags (9”x12”)
- (2) Zip close large overpack bags (24”x24”)
- (1) 12’ strip of evidence tape

### Additional Supplies to be Furnished by Hospital Laboratory

- Purple top blood tubes (EDTA)
- Green or grey topped tubes (Heparin or sodium fluoride)
- Urine cups
- Cold packs
- Dry ice

### Additional Supplies to be Furnished by Hospital Laboratories Using Commercial Carriers (i.e.: FedEx, UPS, etc.)

- Shipping boxes (Cardboard outer with Styrofoam inner liner, or equivalent)
- UN3373 shipping label (include words “Biological Substance, Category B”)
- UN1845 Class 9 dry ice labels

*For a simplified schematic illustrating the procedures for collecting and packaging specimens, see colored chart at end of document:  
[“Collecting and Packaging Specimens Pictorial”](#)*

## CHAIN OF CUSTODY

- The “[Chemical and Radiological Exposure Specimen Chain-of-Custody Forms](#)”, forms should be completed while samples are collected
- The individual collecting the specimens must sign the form in the “Specimen Collector” box
- Include the “blank” samples on the Chain-of-Custody form
- If the samples are transferred to another individual the individual releasing the specimens must sign the “Relinquished by” section and the individual accepting the specimens must sign the “Accepted by” section of the chain of custody
- The name of the individual or company responsible for transporting the specimens to MDH should be written in the “Accepted by” column. **IT IS NOT NECESSARY FOR AN**

**INDIVIDUAL TO SIGN THIS ENTRY.** A receipt of specimen pickup will suffice for chain of custody purposes

- A *copy* of the chain of custody should accompany the specimens to MDH while the original should be maintained at your facility

## SPECIMEN COLLECTION

Collect the following specimens from each person who may have been exposed (blood should not be collected from pediatric patients unless otherwise advised):

*Note: For events where a known **radiological** exposure has occurred with no threat of an unknown chemical exposure, **only urine** should be collected.*

### Urine

- In a screw-capped plastic urine cup, collect at least 25 mL of urine; do not overfill.
- Freeze specimen as soon as possible ( $-70^{\circ}$  C or dry ice preferred).
- Ship the specimens frozen, on dry ice.

### Whole Blood

- Collect three purple-top EDTA 5 or 7 mL tubes OR four purple-top EDTA 3 mL tubes by venipuncture. **DO NOT** use clot-activator or serum separator tubes.
- From the same venipuncture, collect one 3-mL or larger green or gray top tube.
- Label each purple-top tube of blood *in the order collected*, e.g., # 1, # 2, # 3, etc.

### Blanks

For each lot number of tubes and urine cups used for collection, provide the following to be used as blanks for measuring background contamination:

- Two (2) empty, unopened purple-top tubes.
- Two (2) empty, unopened green- or gray-top tubes.
- Two (2) empty, unopened urine cups.

## LABELING SPECIMENS

Specimens shall be labeled with the following information:

- Medical records number
- Specimen identification number
- Date and time of collection
- Collector's initials

## PACKAGING SPECIMENS

Packaging consists of the following components:

- Primary receptacles (blood tubes or urine cups)
- Secondary packaging (materials used to contain and protect primary receptacles)
- Outer packaging (cooler).

### Secondary Packaging for Blood Tubes

- Line the bottom of the gridded box with absorbent material

- Place blood tubes in the gridded box
- Place additional absorbent material on top of the tubes before replacing the cover
- Seal the gridded box with evidence tape, initialing half on the evidence tape and half on the closed gridded box
- Place the box in the provided clear Saf-T-Pak ® bag and seal, taking care to remove as much air from inside the bag as possible.
- Place the bagged box inside the white Tyvek Saf-T-Pak ® envelope
- Seal the opening of the white envelope and place a continuous strip of evidence tape around the package, initialing half on the evidence tape and half on the white envelope
- Place a copy of the completed “[Chemical Exposure Specimen Chain-of-Custody for Blood](#)” form in a sealable plastic bag and put inside the over pack bag along with the specimens

### **Secondary Packaging for Urine Cups**

- Line the bottom of the gridded box with absorbent material
- Place each urine cup in the gridded box
- Place additional absorbent material on top of the cups before replacing the cover
- Seal the gridded box with evidence tape, initialing half on the evidence tape and half on the closed gridded box
- Place the box in the provided clear Saf-T-Pak ® bag and seal, taking care to remove as much air from inside the bag as possible.
- Place the bagged box inside the white Tyvek Saf-T-Pak ® envelope
- Seal the opening of the white envelope and place a continuous strip of evidence tape around the package, initialing half on the evidence tape and half on the white envelope
- Place a copy of the completed “[Chemical and Radiological Exposure Specimen Chain-of-Custody for Urine](#)” form in a sealable plastic bag and put inside the over pack bag along with the specimens

## **SAMPLE TEMPERATURE REQUIREMENTS**

### **Blood**

Blood tubes must be shipped on ice or cold packs to arrive cold, between 1°C to 10°C

### **Urine**

Urine cups must be shipped on dry ice to arrive frozen, use frozen icepacks if dry ice is not available

## **SHIPPING REQUIREMENTS**

### **Transporting Specimens with a Hospital Laboratory Courier**

The packaged specimens should be acceptable for transport by most hospital laboratory couriers. Check with your courier to be certain.

*For a simplified schematic illustrating the procedures for shipping specimens with a commercial carrier, see the colored chart at the end of this document: [“Packing Specimens to be Delivered by a Commercial Carrier Pictorial”](#)*

## **Outer Packaging Requirements for Shipping with a Commercial Carrier**

Do not ship blood and urine specimens together in the same package.

### **Blood Tubes**

- Place a single layer of refrigerator packs on bottom of cooler
- Place the packaged box of specimens on top of the refrigerator packs
- Remove the Chain-of-Custody paperwork from the overpack bag. This will be placed just below the lid of the cooler
- Use cushioning material to minimize shifting while the shipper is in transit
- Place additional refrigerator packs on top of the packaged specimens
- Place the Chain-of-Custody paperwork on top of the additional ice packs
- Place lid on shipper
- Place your shipping address in the upper left-hand corner of the shipper top and put MDH's receiving address in center
- Place the UN 3373 label and the words "Biological Substance, Category B" on the side of the shipping container

### **Urine Cups**

- Place a layer of dry ice or ice packs designed to keep specimens frozen on the bottom of the cooler
- Place the packaged specimens on top of the dry ice or ice packs
- Remove the Chain-of-Custody paperwork from the overpack bag. This will be placed just below the lid to the styrofoam cooler
- Use cushioning material to minimize shifting while the shipper is in transit
- Place additional dry ice or frozen packs on top of the packaged specimens
- Place the Chain-of-Custody paperwork on top of the additional ice packs
- Place lid on the shipper
- Place your shipping address in the upper left-hand corner of the shipper top and put MDH's receiving address in center
- Place the UN 3373 label and the words "Biological Substance, Category B", and a Class 9/UN1845 hazard label on the side of the shipping container
- Write 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 (it is unlawful to ship greater than 5 kg (11 lbs) of dry ice)

## **SHIPPING ADDRESS**

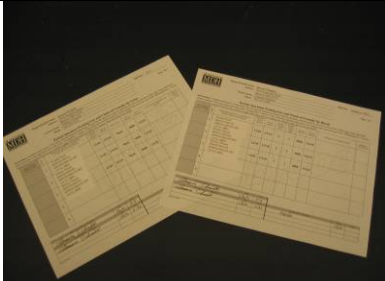





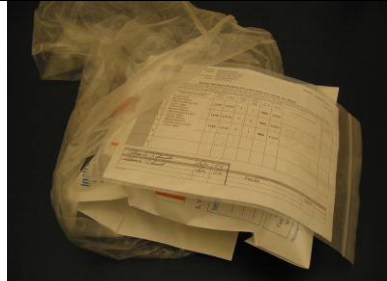

Please contact the MDH chemical response on-call phone number at 612-282-3750, prior to shipping samples.

Minnesota Department of Health  
Public Health Laboratory Division  
Attn: CT on-call Staff  
601 Robert Street North  
St. Paul, MN 55164-0899






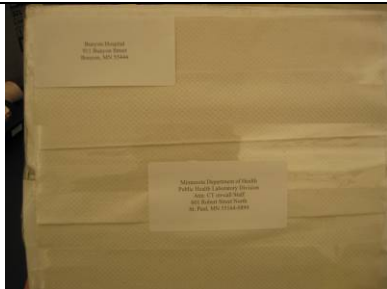


## **QUESTIONS**

If you have any questions or problems with specimen packaging or shipment, please call the **MDH chemical response on-call phone number at 612-282-3750.**

## Collecting and Packaging Specimens Pictorial

			
<p>Prepare Chain-of-Custody paperwork</p>	<p>Collect Specimens:</p> <ul style="list-style-type: none"> <li>• (3) Purple top tubes = &gt; 12ml</li> <li>• (1) Green/grey top tubes = 3ml</li> <li>• (1) Urine cup = &gt; 25ml</li> <li>• (2) blanks for each lot</li> </ul>	<p>Label specimens:</p> <ul style="list-style-type: none"> <li>• Order drawn</li> <li>• Medical records #</li> <li>• Specimen ID #</li> <li>• Date/time of collection</li> <li>• Collector's initials</li> </ul>	<p>Place specimens in gridded box, lining the top and bottom with absorbent material</p>
			
<p>Seal the box with evidence tape, sign, and place in the clear plastic "pressure bag"</p>	<p>Place the bagged box in the white Tyvek® Saf-T-Pak® envelope, seal with evidence tape and sign</p>	<p>Place a copy of the chain-of-custody procedure in a zippered bag. Place C-O-C and specimens in an overpack bag</p>	<p>Instruct courier to keep blood cold (1-10°C) and urine frozen (dry ice). If using commercial carrier follow packing instructions on back.</p>

## Packing Specimens to be Delivered by a Commercial Carrier Pictorial

			
<p>Line the bottom of a IATA/DOT approved shipping container with refrigeration materials (cold packs or dry ice)</p>	<ul style="list-style-type: none"> <li>Place packaged specimens in cooler</li> </ul>	<ul style="list-style-type: none"> <li>Place cushioning material around specimens to prevent shifting during transport</li> </ul>	<p>Place additional refrigeration materials on top of the specimens</p>
			
<p>Place chain-of-custody in a zippered bag and place on top of the samples, place the lid on the cooler and seal the top of the shipper</p>	<p>Place your shipping address in the upper left-hand corner of the shipper top and MDH's address in the center.</p>	<p>Place markings on container:</p> <ul style="list-style-type: none"> <li>UN 3373</li> <li>"Biological Substance, Category B"</li> <li>Class 9/UN 1845 label (for dry ice)</li> </ul>	<p>Complete shipping waybill and attach to shipper. Retain tracking number with records.</p>