



Commonwealth of Massachusetts
Department of Public Health

Helping People Lead Healthy Lives In Healthy Communities

Massachusetts Department of Public Health
State Laboratory

Collecting and Submitting Suspicious Substances for Biological & Chemical Testing

MA DPH State Laboratory
Last Updated September 2012

Purpose

- The following information is provided for trained public safety officials who may collect and submit a suspicious item or substance to the Hinton State Laboratory Institute for biological and/or chemical testing.
- It is recommended that only trained **public safety officials** (HazMat, USPS, FBI, Fire, police etc.) collect these type of specimens.
- Please refer to the State Fire Marshal's "Revised Recommendations for Management of Suspicious or Threat Letters and Substances" document at: <http://www.mass.gov/eopss/docs/dfs/dfs-briefs/advisory-suspicious-substance-2012-cg-v3.pdf>
- The Joint Biological Threat Response System (JBTRS), which was co-developed by Department of Public Health and Department of Fire Services is the Commonwealth's protocol for responding to a suspicious substance and is followed by the hazardous material response teams operating in Massachusetts.

Overview

- Assessing Risk of Suspicious Powders and Liquids
- Notifications & Field Screening of Specimens
- Specimen Collection
- Specimen Packaging
- Completing the Specimen Submission Form
- Specimen Storage Considerations
- Specimen Transport Resources
- Specimen Submission to the MA DPH Hinton State Laboratory
- Specimen Testing and Results
- Frequently Asked Questions

Assess Risk of Suspicious Powders and Liquids



Assess the Level of Risk

Classify the situation into one of three levels:

- I. No Apparent Risk
- II. Low Risk
- III. High Risk

Information can also be found below at:

- “*Triage and Test Prioritization of Suspicious Environmental Specimens*” at: <http://www.mass.gov/eohhs/docs/dph/laboratory-sciences/bt-triage.pdf>
- For assistance and to communicate with the lab, call the BT/CT 24/7 phone (617) 590-6390

I. No Apparent Risk

'No Apparent Risk' description:

The presence of powder, particulate matter, or liquid in a likely location with an obvious explanation and no evident threat (i.e. White powder in a coffee shop)

Testing:

MA DPH State Laboratory testing is not recommended. You may dispose of specimen in the regular trash.

II. Low Risk

'Low Risk' description:

The presence of powder, particulate matter, or liquid with no obvious explanation, but no known threat (i.e. powder associated with a stack of mail)

Testing:

MA DPH State Laboratory testing is recommended.
Please proceed to Notification & Field Screening.

III. High Risk

'High Risk' description:

The presence of any substance or object associated with:

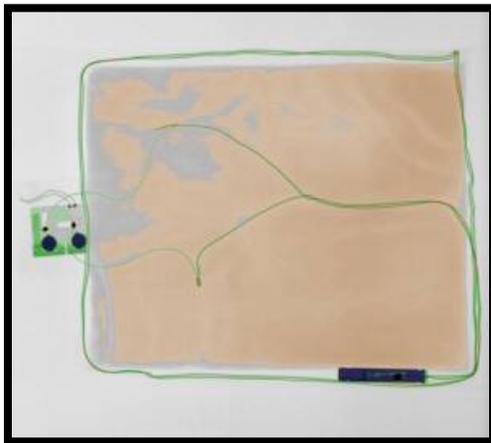
- a written or verbal threat
- a high profile target (public figure, federal building)
- an exposed person going to the hospital
- human exposure or illness/death associated with the incident
- an unusual event determined by public safety and/or public health

Testing:

MA DPH State Laboratory testing is **required**.

Please proceed to Notification & Field Screening.

Notifications & Field Screening



Notification of 'Low Risk' & 'High-Risk' Incidents

- Call the MDPH State Laboratory **BT/CT 24/7 phone** at (617) 590-6390.

The staff answering this phone will ask you questions to determine if FBI and/or the U.S. Postal Inspector need to be notified.

- It is recommended that a **HazMat** response be initiated if a BT/CT specimen will be sent to the laboratory for testing and/or if the package is leaking, giving off an odor or has suspicious markings.
- Notify **local public health officials** according to local protocols.

Notification of 'Low Risk' & 'High-Risk' Incidents

- Notify the **Nuclear Incident Advisory Team** at (617) 242-3453 to report any material known or suspected to contain radioactive material
- Call **State Police Bomb Squad** at (508) 820-2121:
 - If the box/package/envelope is sealed and has a thickness greater than a folded sheet of paper OR
 - If the item is suspected to involve explosives, incendiary devices OR
 - If the item is suspected to contain batteries, wires, switches, glass, or metal.



Field Screening



- Field screen for acute hazards is **required** prior to laboratory submission:
 - a. Protects the laboratory, laboratory personnel and the individual transporting the specimen
- **Minimum** requirement:
 - a. Radiation
 - b. Explosive device (x-ray) if item is a **sealed**:
 - i. box/package
 - ii. envelope w/thickness > a folded sheet of paper
- If you do not have the capability to screen specimens, request resources that do have the capability

Specimen Collection



Specimen Collection Precautions

- Only trained responding **public safety officials** (fire, police, HazMat, USPS, FBI. etc.) should collect specimens for biological and/or chemical testing.
- Use appropriate personal protective equipment to reduce exposure to agents.
- **Do not open** a sealed suspicious envelope/package without prior consultation with the laboratory.
- For any biological testing, please collect specimen in a **PLASTIC** container; avoid glass containers.

Collection Guidelines

- **Quantity of specimen**
 - **DPH STATE LAB SPECIMEN HAS PRIORITY**
 - **Don't use up the specimen doing destructive field screening (i.e. pH, HHA's).**
- **Minimize the aerosolization of the powder**
- **If multiple specimens are found at the same facility:**
 - Change gloves between specimens
 - Label specimens with brief description (i.e. table top, floor etc.)
- **Collection container**
 - Use plastic containers for specimens suspected to contain ricin toxin or any other biological agent
 - Don't use glass containers for biological specimens
 - Use glass containers if a chemical agent is suspected.
 - If there is enough specimen, pH paper can provide assistance in this determination.

Collecting Powder from Mail or Threat Letters

- Do not open a sealed suspicious envelope/package without prior consultation with the laboratory.
- Always collect the envelope, associated pages or cards and any powder.
- Collect powder in separate container if powder has escaped the envelope.
- Limit handling of envelope and inside contents to prevent destruction of latent prints.
- All items (envelope, letter and powder) must be submitted to the laboratory for testing.



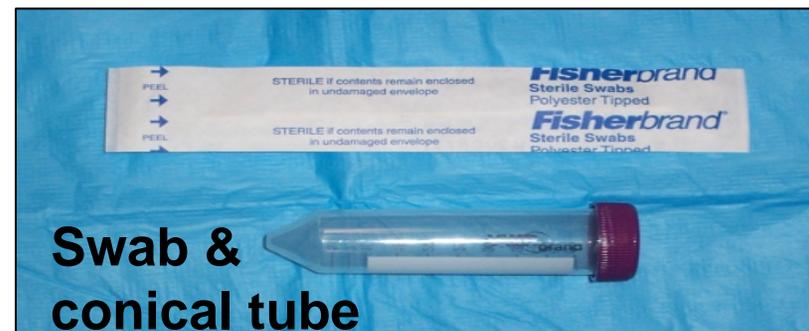
Collecting Visible/Bulk Powder

- Sterile scoops, spatulas or cards can be used to collect the powder and place it into a sterile 50-mL conical tube.
- Refer to ASTM – E2458
“Standard Practices for Bulk Sample Collection of Visible Powders Suspected of Being Biothreat Agents from Nonporous Substances for further information.



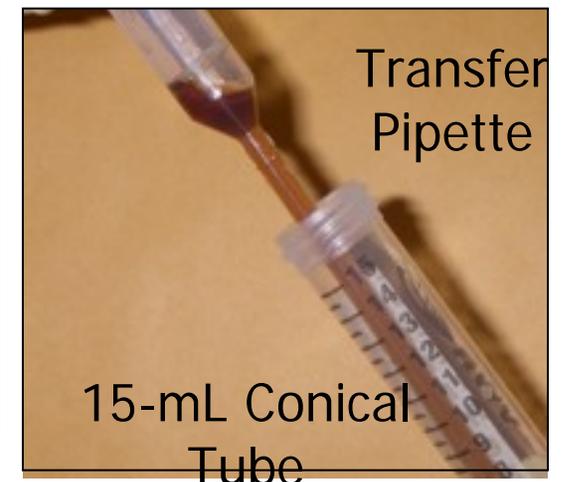
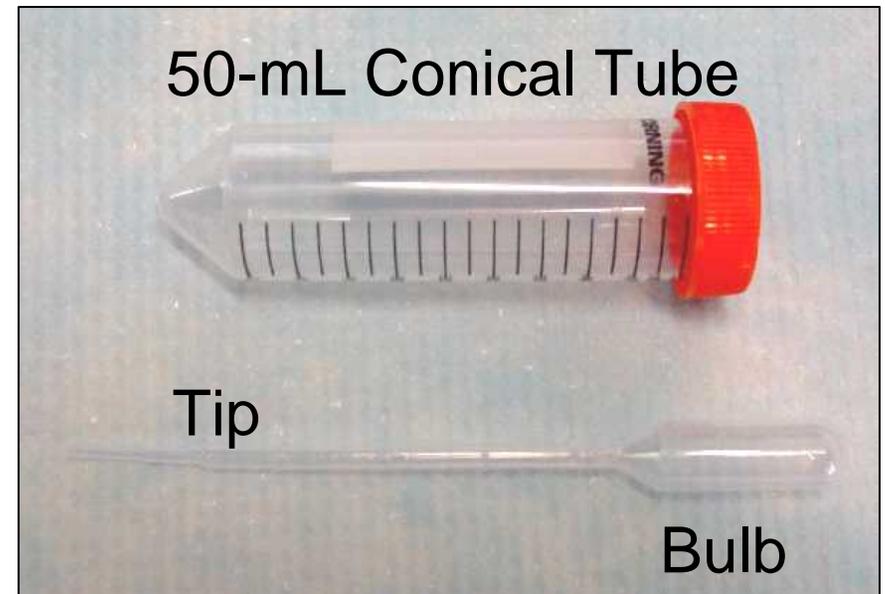
Collecting Trace Amounts of Powder

- Sterile swabs can be used to collect trace amounts of powder or powder found in crevices.
 - Swabs should be polyester tipped with a plastic shaft
 - Do not use wooden shafted or cotton tipped swabs
- Remove swab from packaging.
- Collect specimen by inserting and rotating the swab in the powder or crevices and then place the swab in the plastic holder or conical tube.



Collecting Liquid Specimens

- Sterile transfer pipettes can be used to collect liquid specimens.
- Squeeze the pipette bulb and place the tip into the specimen.
- Release the bulb to draw up the specimen.
- Place the pipette tip inside the sterile conical tube and squeeze the bulb to release.
- Screw cap tightly and secure with parafilm



Packaging Specimens in the Biological Threat (BT)/ Chemical Threat (CT) Kits



Availability of BT/CT Kits

In 2004 and 2006, the MA DPH State Laboratory sent examples of the BT/CT kit to all the local fire departments and hazmat teams in Massachusetts.

The State Laboratory will mass-mail BT/CT kits during:

- a bioterrorism event OR
- a heightened level of public anxiety such as we experienced after the anthrax incidents in 2001.

BT/CT Kit Components

Inner Specimen Bag (12" X 15")
affixed with a biohazard label.

Outer Protective Transport Bag
(13" X 18") with document
envelope and return address label.

Document envelope contains the
*Biological/Chemical Specimen
Submission Form*.



Alternative Acceptable Packaging

Two zip-lock bags

- Bag #1 (inner specimen bag)
- Bag #2 (outer protective transport bag)

Other triple packaging is acceptable

- Evidence bags, paint cans, plastic buckets
- Primary receptacle placed in secondary and tertiary packaging

Please do not place any paperwork inside with the specimen.

If the specimen is larger than the plastic bags, please call the BT/CT 24/7 phone 617-590-6390.



Packaging Specimens in the BT/CT Kit

1. Carefully place the specimen into the inner specimen bag of the BT/CT kit.
Specimen examples include:
 - Tube containing collected powder or liquid
 - Swab containing residual powder
 - Envelope with letter and powder
2. Secure the inner bag with the zipper lock closure. To avoid contamination, **do not expel or force the air** from the bag.

Packaging Specimens in the BT/CT Kit

3. Once the inner specimen bag is sealed with the zipper mechanism, **do not reopen**.
4. Place the inner closed plastic specimen bag into the outer plastic transport bag.
5. Seal the outer bag with the closure.
6. Complete the paperwork in the cold zone/clean area.

Packaging Specimens in the BT/CT Kit

7. Fold and place all documents (BT/CT Specimen Form, exposure list, etc.) into the document envelope.

Important Reminders

- ❖ The paperwork should always remain in the cold zone/clean area
- ❖ Avoid the use of tape on the specimen bags
- ❖ Every effort should be made to avoid any tears or punctures to the plastic bags.



Completing the Specimen Submission Form



Biological/ Chemical Specimen Submission Form Environmental Threat

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 <p>The Commonwealth of Massachusetts Executive Office of Health and Human Services Department of Public Health Hinton State Laboratory Institute 305 South Street, Jamaica Plain, MA 02130 (617) 590-6390</p>		<p><i>Do not write in this box; SLI use only</i></p> <table border="1"> <tr> <td>SLI TRACKING NUMBER</td> <td>IML NUMBER(S)</td> </tr> </table>		SLI TRACKING NUMBER	IML NUMBER(S)
SLI TRACKING NUMBER	IML NUMBER(S)				
<p>Biological/Chemical Specimen Submission Form Environmental Threat</p>		<p>Received By Print Name: _____ Signature: _____ Date Received: ____/____/____ Time Received: ____ am pm Priority Sample <input type="checkbox"/> Yes <input type="checkbox"/> No</p>			
1	<p>COLLECTOR/SUBMITTER INCIDENT IDENTIFIER #: _____</p>	<p>INCIDENT REPORT ATTACHED? Yes No</p>	<p>EVIDENCE? Yes No</p>	<p>SPECIMEN SCREENED? Yes No (if yes, fill out back of form)</p>	
<p>SAMPLE DESCRIPTION: _____</p>					
<p>DATE COLLECTED: ____/____/____ TIME COLLECTED: ____ am pm COLLECTED BY: _____ (print name)</p>					
2	<p>LOCATION WHERE SAMPLE WAS COLLECTED:</p> <p>Location Name: _____ Contact Name: _____ Address: _____ Telephone: _____</p>				
3	<p>COLLECTOR INFORMATION:</p> <p>Contact Name (Lab Report To): _____ Organization: _____ Address: _____ Telephone: _____</p>		<p>4 SUBMITTER INFORMATION: <input type="checkbox"/> SAME AS COLLECTOR</p> <p>Contact Name (Lab Report To): _____ Organization: _____ Address: _____ Telephone: _____</p>		
5	<p>DELIVERY TO STATE LABORATORY INFORMATION:</p> <p>Delivered By (Name): _____ Organization: _____ Delivered By (Title/Badge#): _____ Phone Number: _____</p>				
<p>Page 1 of 2 / SS-LP-1-01 Last Updated September 2012</p>			<p>http://www.mass.gov/eohhs/docs/dph/laboratory-sciences/bt-intake-form.pdf</p>		

Completing Box 1

Biological/ Chemical Specimen Submission Form

Collector/Submitter's Incident Identifier #: Please enter the incident identifier number of collector/submitter.

Incident Report Attached? Circle *Yes* or *No*.

Evidence? Circle *Yes* or *No*. The MA DPH State laboratory will initiate a chain of custody on the specimen.

Specimen Screened? Circle *Yes* or *No*. If you indicate yes, please fill out the specimen screening information section on the back of the form. Specimens must be screened for radiation and explosive device.

Completing Box 1

Biological/ Chemical Specimen Submission Form

Specimen Description: Write a specific and detailed description of the specimen (color, powder, tablet, liquid, granular, clumpy, viscous, etc.). Specify location, and source/ surface of where material was collected.

Date Collected: Indicate the date the specimen was collected.

Time Collected: Indicate the time (am/pm) specimen was collected.

Collected by: Print name of technician/ agency that collected specimen.

Completing Box 2

Biological/ Chemical Specimen Submission Form

Location Where Sample Was Collected: List the name of the building and where the incident occurred.

Address: Fill in the complete location address.

Contact Name: Enter the name of the individual in charge of the location (i.e. building manager, landlord, etc.).

Telephone: Fill in the contact person's phone number for the location.

Completing Box 3

Biological/ Chemical Specimen Submission Form

Collector Information: Write the complete name and contact information of the person you would like to receive verbal presumptive and written final lab results.

Organization: Write the name of the collector organization.

Address: Write in the collector's address.

Telephone: Record the specimen collector's telephone number.

Note: If the specimen collector is also the specimen submitter

1. Please check the box **Same as Collector**
2. The information above only needs to be entered in box 3. ³²

Completing Box 4

Biological/ Chemical Specimen Submission Form

Submitter Information: Write the complete name of person you would like to receive the final lab report.

Organization: Write the name of the submitter organization.

Address: Write in the submitter's address.

Telephone: Record the specimen submitter's telephone number.

Completing Box 5

Biological/ Chemical Specimen Submission Form

Delivery to State Laboratory: Fill in the complete name, title and badge number of the person delivering the specimen.

Organization: Fill in the deliverer's organization name.

Phone #: Fill in the phone number for the person delivering the specimen.

Biological/ Chemical Specimen Submission Form Environmental Threat

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Massachusetts Department of Public Health Hinton State Laboratory Institute Biological/Chemical Specimen Submission Form / Environmental Threat		Do not write in this box; SLI use only SLI TRACKING NUMBER
SPECIMEN SCREENING INFORMATION		
SPECIMEN WAS SCREENED FOR: (check any applicable boxes and write additional information if the box is checked)		
<input type="checkbox"/> RADIATION	Screening Method(s): _____ Background Reading: _____ Sample Reading (units): _____	
<input type="checkbox"/> EXPLOSIVES	Screening Method(s): _____ Results: _____	
<input type="checkbox"/> CHEMICALS	<input type="checkbox"/> WMDs Screening Method(s): _____ Results: _____ <input type="checkbox"/> pH Results: _____ <input type="checkbox"/> OTHER Screening Method(s): _____ Results: _____	
<input type="checkbox"/> OTHER	Screening Method(s): _____ Results: _____	
SAMPLE SCREENED BY: (Fill out this section completely)	Technician Name(s): _____ _____ Address: _____	Organization(s): _____ Telephone(s): _____
COLLECTOR/SUBMITTER INCIDENT IDENTIFIER #: _____		
The State Laboratory Institute does not accept explosive or incendiary material or chemical WMD. Call the 24/7 Laboratory Emergency Cell phone at 617-590-6390 for guidance.		
Questions regarding the submission and analysis of explosive or incendiary material should be referred to the Arson & Explosives Unit at the State Crime Lab 8 am – 5 pm Telephone ~ 508-358-3220 / After Hours Cell ~ 508-820-2121		
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Recording Specimen Screening Results

Biological/ Chemical Specimen Submission Form

Radiation: Check box if screening has been performed.

Screening Method (s): Survey meter, Geiger counter, etc. List the Manufacturer, model # and serial # of the meter and detector.

Background Reading: Remember to indicate the units of measurement (CPM, milliRem/hour, etc.)

Specimen Reading (units): Please indicate if the screening was done after the specimen was packaged.

For guidance, call the State Police Dispatch 24/7 phone 617-820-2121 to reach the state radiation control program Nuclear Incident Advisory Team (NIAT).

Recording Specimen Screening Results

Biological/ Chemical Specimen Submission Form

Explosives: Check box if screening has been performed for an explosive device.

Screening Method (s): X-ray, Canine, etc.

Results: Record the results of screening.

Submission and analysis of explosive/incendiary material should be referred to the MA State Police Crime Lab Arson & Explosives Unit.

Recording Specimen Screening Results

Biological/ Chemical Specimen Submission Form

Chemicals:

WMDs

pH

Other

1. Check box if screening was performed.
2. Indicate screening method performed (M8 paper, detector, etc).
3. Record the results of screening.

SLI does not accept chemical WMD environmental specimens. Call the BT/CT 24/7 phone at 617-590-6390 for guidance.

Recording Specimen Screening Results

Biological/ Chemical Specimen Submission Form

Other: Check the box to indicate other field screening.

Screening Method (s): Indicate the method of screening.

Results: Record the screening results.

Recording Specimen Screening Results

Biological/ Chemical Specimen Submission Form

Specimen Screened By:

Collector/Submitter Incident Identifier #: Please enter the incident identifier number of either the collector or the submitter.

Technician Name(s): Write the technician name.

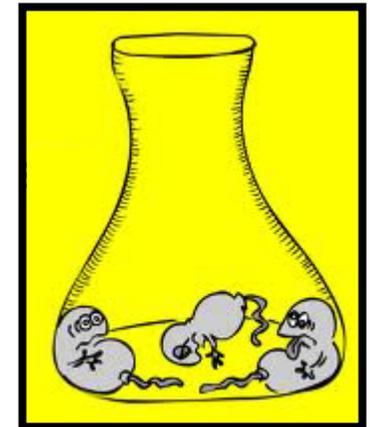
Organization (s): Indicate the organization screening the specimen.

Address: Write in the organization's address.

Telephone: Record the technician's telephone number.

Specimen Storage Considerations

- Store specimens in a secure place
- Avoid UV exposure
- **Temperature is important !!**
 - Don't store specimens above 80 degrees or below 50 degrees
 - Kills some bacteria and viruses
 - Breaks down some toxins
- Don't store specimens for extended periods of time (1-2 days max)
 - Some bacteria can't survive long in the environment



What Resources are Available to Transport Specimens?



- Local public safety and public health authorities
- US Postal Inspector (if on scene)
- FBI (if on scene)
- CST (if on scene)
- MA State Police (in certain situations)

- Transporter must be informed that the:
 - specimen was field screened properly
 - specimen was packaged properly
 - specimen poses no immediate hazard
 - BT/CT lab has been notified

Submission of Specimens

**The MA DPH State Laboratory
305 South Street
Jamaica Plain, MA 02130**

617-590-6390

Submission of Specimens

1. Call the BT/CT 24/7 phone (617)590-6390 ahead to provide an estimated time that specimen will arrive at the lab to ensure that someone is there to receive the specimen.
2. Ensure the following before transporting the specimen to the laboratory:
 - The specimen has been field screened for radiation, and explosive device if item is sealed
 - The specimen as been properly triple packaged
 - The BT/CT Submission form has been completed in full
3. Store the BT/CT Submission form on the outside of the specimen so it does not become contaminated
 - Example: The document pouch/envelope found on the outer zip lock bag of the BT/CT Submission kit
4. Transport the Specimen and Submission Form to the specimen receiving area (right side entrance) of the MA DPH State Laboratory.

Location of the MA DPH State Laboratory

The MA DPH State Laboratory is one of the occupants of the William A. Hinton State Laboratory Institute

The Hinton State Laboratory Institute is located on the UMASS Medical School Jamaica Plain Campus

The Institute overlooks the Arnold Arboretum and the Forest Hills MBTA Station



305 South Street

Jamaica Plain, MA 02130

Specimen Testing

No/Low Risk specimens submitted for testing will be tested:

Monday – Friday 8am – 5pm (within an hour of receipt)

Specimens submitted afterhours or on weekends will be tested the next business day.

- Final culture results will be reported no earlier than 5 days

High Risk specimens submitted for testing will be tested:

Monday – Friday 8am – 5pm (immediately upon receipt)

Afterhours or on weekends (within an hour of receipt)

- Presumptive test results will be reported within 24 hours.
Final culture results will be reported no earlier than 5 days.

Specimen Results

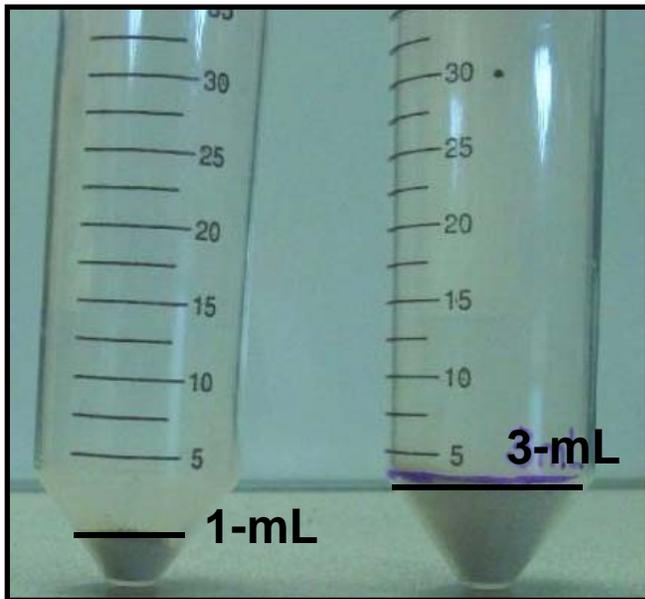
- The laboratory will report test results by phone and mail to the submitter and collector for those specimens classified as 'high risk'.
 - Results on specimens classified as “No Risk” or “Low Risk” will be reported by mail only.
- The epidemiologist will report results to the local board of health.
- For questions about a submitted specimen, please call the BT/CT 24/7 number at (617) 590-6390. Be ready to provide the identification number assigned to your specimen.
Example: SLI-5678.

Frequently Asked Questions



Frequently Asked Questions

How much specimen does the MA DPH State Laboratory need?



Answer:

- The MA DPH State Laboratory prefers 3 milliliters/ 3 milligrams of specimen for biological and chemical testing; however most testing can be completed on 1-mL.
- A swab specimen can be tested by the MA DPH State Laboratory for biological agents; however chemical identification can not be performed on a swab specimen.

Frequently Asked Questions

What should I do if there's a large quantity of uncontained powder?

Answer:

- It is recommended to call the HazMat team
- They will determine how much powder needs to be sent to the lab and collect the specimen using sterile collection tools and techniques.



Frequently Asked Questions

Why can't I open a sealed envelope/package and if I can't open the item how can I field screen the specimen?

Answer:

- We don't want sealed items opened in the field because it:
 - increases the chances of losing the specimen material
 - and increases the likelihood of further contamination of the scene
- Field screening may be limited to x-ray for explosive device and radiation screening of the outside of the envelope.
- With that said, there have been instances where opening the item was warranted
- Contact the laboratory for guidance



Frequently Asked Questions

Should a responding public safety official try to decontaminate an area after collecting a suspicious substance in order to appease the occupants?

Answer:

- No!
- You should never attempt to decontaminate an area without consulting with the FBI or other responding law enforcement.
 - You may be destroying evidence from a scene of a crime
- Additionally, you can never assume that your decontamination efforts were successful.
 - Your actions may cause further harm and provoke litigation if a biological agent is confirmed and people become ill.



Frequently Asked Questions

What should I do with garbage created during specimen collection?



Answer:

- Do not send any trash to the laboratory.
- Seal and store the garbage in a separate container.
- After you receive results from the laboratory you will know if it is okay to discard the garbage into your regular trash.

Comments

Additional questions or comments regarding the collection and submission of environmental specimens for biothreat or chemical threat testing can be forwarded to:

Cheryl Gauthier

Director, Bioterrorism Response Laboratory

Hinton State Laboratory Institute

Jamaica Plain, MA 02130

Phone: 617-983-6266