

Preparing Human and Lab Rat and Mouse Specimens for Air Shipment with Minimal Likelihood that Pathogens are Present

I. GENERAL AWARENESS/FAMILIARIZATION TRAINING.

When you prepare packages containing hazardous materials and hand them off to commercial air carriers, you are functioning as a "Hazmat Employee" who is required to be familiar with the requirements of the Federal hazardous materials transportation laws found in the [Code of Federal Regulations 49CFR Chapter 1, Subchapter C](#). The contents of this Subchapter C are called the Hazardous Materials Regulations (HMR). The requirements in the HMR apply to each person who offers a hazardous material for transportation in commerce, causes a hazardous material to be transported in commerce, or transports a hazardous material in commerce and who performs or is responsible for performing a pre-transportation function. The purpose of the HMR is to prevent injuries by ensuring that hazardous materials are packaged and marked in a manner to prevent injuries. There are penalties for noncompliance. Each person who knowingly violates a requirement of Federal hazardous material transportation law is liable for a civil penalty of not more than \$32,500 and not less than \$275 for each violation. **This training is exclusive to air shipping from UC Irvine human, lab rat & mouse specimens with minimal likelihood that pathogens are present.** This type of shipment does not require specialized procedures or materials beyond provided for in this training. Procedures and materials beyond this training include Shipper's Declaration Forms, United Nations Specification Packaging, and US Fish & Wildlife permits. If your hazardous materials shipment requires Shipper's Declaration Form or United Nations Specification Packaging, you must contact Environmental Health & Safety at 824-6200 for further details.

II. FUNCTION-SPECIFIC TRAINING

DEFINITIONS

- Lab rats and mice are species commonly used in research at UC Irvine, not endangered species;
- Minimal likelihood that pathogens are present is determined by the shipper's professional judgement using the following basis:
 1. Known medical history;
 2. Symptoms and individual circumstances of the source, human or animal;
 3. Endemic local conditions;
- Some examples of specimens which may be transported using this procedure when minimal likelihood that pathogens are present include:
 1. Human, lab rat and mouse cell cultures which have not been genetically engineered or modified;
 2. Blood or urine tests to monitor cholesterol levels, blood glucose levels, hormone levels, or prostate specific antigens (PSA);
 3. Tests required to monitor organ functions such as heart, liver, or kidney functions for humans or animals with non-infectious diseases, or therapeutic drug monitoring;
 4. Tests conducted for insurance or employment purposes and are intended to determine the presence of drugs or alcohol;
 5. Pregnancy tests;
 6. Biopsies to detect cancer;
 7. Antibody detection in humans or animals.

PROCEDURE

1. If shipping outside the United States, contact UCI Office of Research Administration (ORA) for assistance in determining any specific export licensing requirements before proceeding to Step 2. Contact: Marci Copeland at marci.copeland@rgs.uci.edu. Have receiver obtain import permits if necessary.
2. If including Dry Ice in the shipment, follow additional procedures for assembling the package and marking the outer box.

References:

Section 3.6.2.2.3.6 Patient Specimens, Dangerous Goods Regulations. International Air Transport Association. 2006.

[CFR49.172.704 Training Requirements](http://www.myregs.com/dotrspa/) at www.myregs.com/dotrspa/

[CFR49.173.134 Class 6, Division 6.2--Definitions and exceptions](http://www.myregs.com/dotrspa/) at www.myregs.com/dotrspa/

3. Place Material In Watertight Primary Container



- All primary receptacles must have positive closures (such as screw-on or push-on lids) and must be taped, wired, or other secured by other positive means.
- Examples include plastic canisters, glass/plastic jars, glass/plastic vials.
- Liquids must not completely fill the inner package at 55C (131F).
- Plastic primary receptacles must have a wall thickness at least 0.2 mm.
- You must cushion each primary container to prevent contact with other containers to prevent breakage. The cushioning material can be the same material used for absorbent required in Step 4.
- Maximum specimen contents per inner package is 1L (1kg).

4. Place Primary Container In a Watertight Secondary Container



- Examples of secondary packages include plastic canisters, sealed plastic bags, sealed Styrofoam containers 1" thick minimum, screw-cap cans.

5. Place Absorbent Material Between Primary and Secondary Container



- Make sure that multiple primary receptacles are individually wrapped to prevent contact.
- Use enough absorbent material to absorb the entire contents of all primary containers.
- Examples include cellulose wadding, cotton balls, super absorbent packets, paper towels.

6. Place Secondary Container Into a Sturdy Outer Packaging



- Sturdy outer packaging capable of withstanding a 7 foot drop from any direction.
- UNACCEPTABLE outer packaging includes Styrofoam boxes, plastic bags, paper envelopes, FedEx envelopes, FedEx tubes, FedEx Pak or FedEx box.
- The minimum package size accepted by FedEx is 7" X 4" X 2". For packages below this size, FedEx offers overwraps to bring the package up to the minimum size, as long as your package meets the four basic packaging requirements (Steps 2-5 above).
- Maximum specimen contents is per outer package is 4L (4kg).

7. Mark Outer Packaging

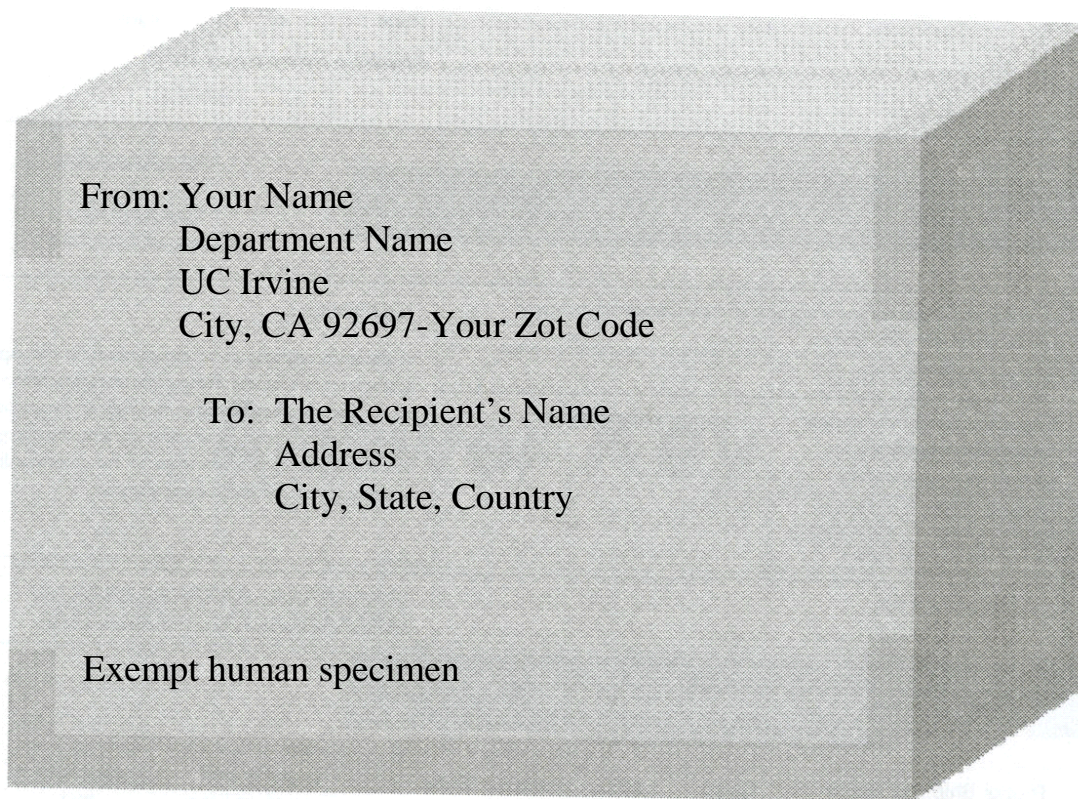
- One the same side of the outer package:
 - Clearly print the Addressee and Addressor.
 - Write neatly near bottom "**Exempt human specimen**" or "**Exempt animal specimen**", as appropriate.

References:

Section 3.6.2.2.3.6 Patient Specimens, Dangerous Goods Regulations. International Air Transport Association. 2006.

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This packaging and labeling procedure is only for those air carriers that accept goods under the International Air Transport Association (IATA) & U.S. DOT Dangerous Goods Regulations.

References:

Section 3.6.2.2.3.6 Patient Specimens, Dangerous Goods Regulations. International Air Transport Association. 2006.

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II. SAFETY TRAINING

- A. Emergency Response Information. Hazmat employees shipping Excepted Quantities of hazardous materials [are exempted](#) from safety training on emergency response information as required in the HMR. UC Irvine hazmat employees shipping exempted human and animal specimens must complete safety training on emergency procedures provided in Core Safety, Lab Core Safety, SOM Annual Safety Training, Bio Sci 194S or Hazard Communication trainings prior to preparing hazardous materials packages. If you are not current on this training, log onto www.ted.uci.edu, take the Safety Training Self-Assessment, then complete the required safety trainings. Additionally, emergency procedures for responding to hazardous materials incidents are described in the Emergency Procedures Flipcharts for [UCI](#) and [UCIMC](#).
- B. Measures to protect hazmat employees from hazardous materials hazards and methods and procedures for avoiding accidents are provided through the Core Safety, Lab Core Safety, SOM Annual Safety Training, Bio Sci 194S or Hazard Communication trainings. UCI hazmat employees take at least one of these courses based on their job duties at UC Irvine. If you are not up to date on these trainings, log onto www.ted.uci.edu, take the Safety Training Self-Assessment, then complete the required safety trainings.

IV. SECURITY AWARENESS TRAINING

Regardless of contents, thefts are possible when packages are left unattended. Those wanting to cause harm or create fear in the community may target packages containing hazardous materials. Such packages are easily identifiable since the HMR require identifying markings on the outer package. Hazardous materials packages must be secured until physically handed off to the air carrier's representative. Any suspicious persons or activity in areas where hazardous materials packages are kept must be immediately reported to UCI Police (tel. 911) or UCIMC Security (tel. 714.456-6321) for response. Follow instructions in the [UCI](#) Emergency Procedures flipchart including getting a good description of the person(s) if safety allows.

IV. COMPETENCY ASSESSMENT

1. What is the purpose of the Federal hazardous materials transportation laws?
2. How much absorbent material needs to be placed between primary and secondary package?
3. True or False: Secondary packages need to be leakproof?
4. How much human specimen can be shipped in a single outer package?
5. True or False: Multiple inner packages need to be cushioned between each other to prevent breakage?
6. Who can package human specimens with minimal likelihood of having pathogens present?
7. Hazardous materials packages must be kept in a secured area?
8. Suspicious persons in the area where hazardous materials packages are kept should be responded to by: _____
9. True or False: There are additional requirements when dry ice is included in the package?

Send assessment answers for feedback to chris.haug@uci.edu.

CERTIFICATION OF TRAINING:

I certify completion of training on hazardous materials shipping regulatory awareness, safety, security, and function specific procedures for exempt human and animal specimens..

Trainee Signature _____, Date _____ (renew every two years).

Maintain this record of training with your work-unit specific training. Enter as an External Learning Event in your TED transcript. Ask your SOS Representative for assistance.

References:

Section 3.6.2.2.3.6 Patient Specimens, Dangerous Goods Regulations. International Air Transport Association. 2006.

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