UNIVERSITY OF SUSSEX

SPG 37-11

Revision 1 May 2011

Guidance for shipping biological material and environmental testing samples

Certain biological samples, cultures and materials other than chemicals fall within the description of dangerous goods for transport and both national and international legislation demand that stringent requirements are met if the goods are transported by any means. Non-dangerous biological materials also have to be transported in such a way that they are not likely to leak in transit and trigger safety/security alerts or cause unnecessary concern to anyone who may come into contact with leaked material. The Human Tissue Act also requires that human material be transported in an appropriate manner as described below.

This guidance, some of which has been taken from FEDEX advice booklet summarises the main requirements when transporting the most common types of biological research materials. The term "Transporting" is used in the general sense and should be interpreted as including t

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Genetically modified micro-organisms - If a GMMO or GMO does not meet the definition of an infectious substance and does not fall into either category A (UN2814 or UN2900) or category B (UN3373), it must be assigned to the classification “Genetically Modified Micro-Organisms” (UN3245) in Class 9. It is not subject to any other requirements in the IATA Regulations. A diamond-shaped marking for UN3245 must be applied to the outside of the outer packaging

Environmental Test Samples

Packaging of environmental test samples such as soil and water must also meet the four basic packaging requirements listed above.

Refrigerants

Dry Ice is considered a miscellaneous hazard (class 9) for shipping and all packages MUST show the miscellaneous hazard diamond and UN 1845.

If shipping dry ice, the packaging must be leak-proof and the outer packaging must allow for the release of carbon dioxide gas when the solid sublimates i.e. not completely sealed. Dry ice must be placed outside the secondary packaging and interior supports must be provided to secure the secondary container as the refrigerant sublimates

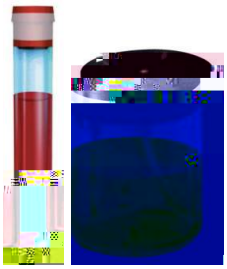
Liquid Nitrogen for use in shipping specimens is regulated and the liquid nitrogen is a dangerous good. This will need to be shipped as UN1977 Nitrogen, refrigerated liquid.

Dry shipper for shipping materials on liquid nitrogen is a safer method and biological materials can be shipped refrigerated in dry shippers. These are insulated packages containing refrigerated liquid nitrogen fully absorbed in a porous material.

Packaging

1)

Primary Container



Leak Proof

- at temp range range of -40 C to 55 C
- pressure differential of not less than 95 kPa
-

2)

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3)

Absorbent material

Place absorbent material between the primary and secondary receptacle, making sure that if more than one item that each are separately wrapped to cushion them from each other. Use enough absorbent material to absorb the entire contents of all

4)

Sturdy Outer Container – Overpack

Sturdy outer packaging must be rigid, consisting of corrugated fiberboard, wood, metal or rigid plastic and be appropriately sized for content.

For liquids, the outer packaging must not contain more than 4 L.
For solids, the outer packaging must not contain more than 4 kg.

At least one surface of the outer packaging must have a minimum dimension of 100 mm x 100 mm (4 in x 4 in).

Dry ice if needed (200 Kg limit) must be between secondary and outer packaging
Interior support must be provided to secure the secondary packaging(s) or packages in the original position after the ice or Carbon dioxide, solid (dry ice) has been dissipated. If ice is used the packaging must be leak-proof. If Carbon dioxide, solid (dry ice) is used the outer packaging must permit the release of carbon-dioxide gas ie the parcel must not be sealed.
For Biological Substances Category B (UN 3733), an itemized list of contents must be enclose between the secondary packaging and the outer packaging.

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The following must be adhered to:

(please note UPS will NOT SHIP Infectious Substances, Category A!!)

a. If you are planning to ship infectious materials, Category A please contact the University Biological Safety Advisor for advice on this process.

b. Biological substance, Category B

- The name, address and phone number of the responsible person must be on this document

NOTE: The phone number of the responsible person should be available during regular business hours in case of questions or problems.

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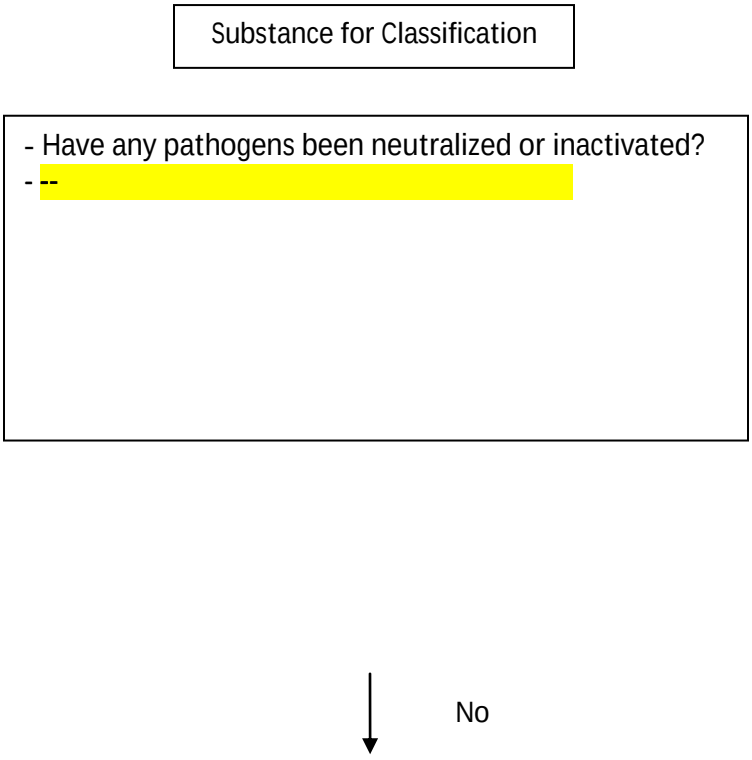
Shipping Flowchart



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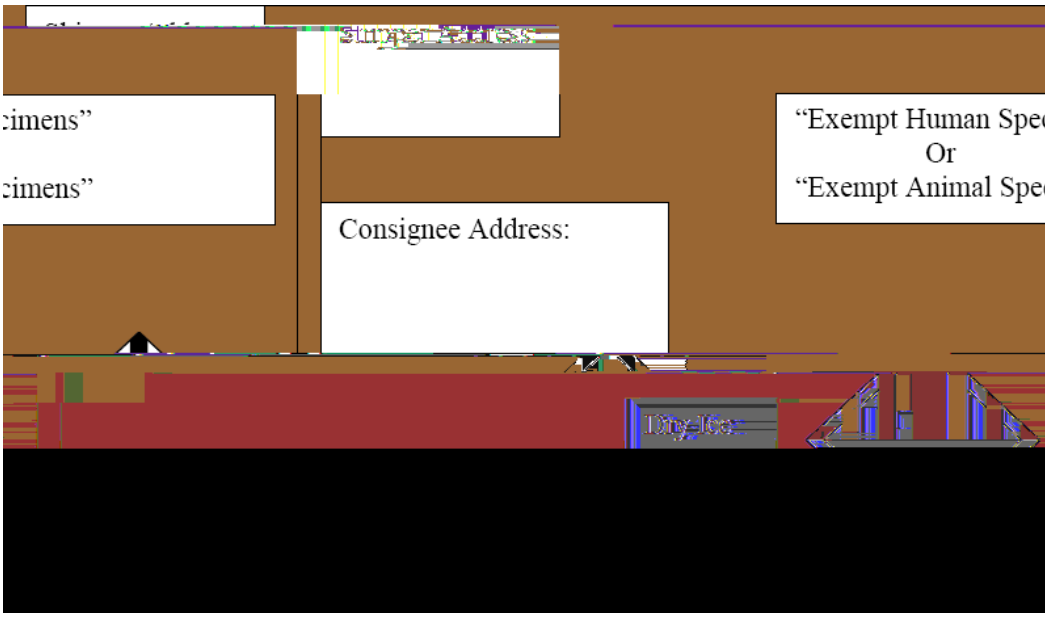
Label and Marking Packages

Example 1 -

Example 2 - Shipping Exempt Human or Animal Specimens on Dry Ice



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