



## **Shipment of Biological Materials & Dry Ice Manual**

*Many thanks and credit to:  
Andy Glode & David Gillum  
University of New Hampshire - Office of Environmental Health and Safety*

*Updated on  
February 17, 2004*

# TABLE OF CONTENTS

I.	Introduction.....	3
II.	Training Requirements .....	3
III.	Shipping Overview .....	4
IV.	Shipment Types .....	4
	A. Diagnostic Specimens.....	5
	1. Packaging.....	5
	2. Labeling .....	5
	B. Biological Products.....	6
	C. Genetically Modified Organisms and Microorganisms .....	6
	D. Infectious Substances .....	7
	1. Packaging.....	7
	2. Labeling .....	7
V.	Packaging Biological Materials .....	8
	A. Triple Packaging .....	8
	B. Other Packaging Requirements .....	10
VI.	Shipper's Declaration for Dangerous Goods.....	10
VII.	CDC Select Agents .....	13
VIII.	Importing and Exporting Biological and Infectious Agents .....	13
	A. Importation of Infectious Agents.....	13
	B. Importation of Plant/Agricultural Pests .....	13
	C. Importation of Fish and Wildlife.....	13
	D. Export Guidelines for Infectious Agents of Humans, Animals, Plants, and Related Materials.....	14
	Appendix A – Manufacturers of Certified Shipping Containers for Infectious Substances, Diagnostic Specimens & Dry Ice	
	Appendix B – Declaration for Dangerous Goods Guide	
	Appendix C – Example Declaration Form	
	Appendix D – Intent to Ship Hazardous Materials	
	Appendix E – Blank Declaration for Dangerous Goods	
	Appendix F – APHIS Plant Pathogens, HHS Select Infectious Agents & USDA High Consequence Livestock Pathogens/Toxins	

## I. Introduction

The Georgia State University (GSU) Institutional Biosafety Committee (IBC) has adopted this manual to assist in the shipment of biological materials and dry ice. This document includes information about how to properly classify, package, mark and label your shipment. This manual also describes the training requirements necessary to ship biological materials and dry ice.

Shipped biological specimens, infectious agents and other biological materials are regulated by governmental and non-governmental, consensus development organizations. Penalties for non-compliance with the rules are significant and could result in the following fines:

- Up to \$250,000 and up to a year jail sentence for individuals.
- Up to \$500,000 per incident for organizations.

Several agencies regulate the shipment of biological materials including:

- International Air Transport Association (IATA).
- US Department of Transportation (DOT).
- US Public Health Service (PHS).
- Occupational Health and Safety Administration (OSHA).

Infectious substances and other dangerous goods must always be transported according to the appropriate regulations. Carrying dangerous goods by hand, for example in a vial in your pocket or in luggage, is strictly prohibited. IATA/DOT regulations cover your checked luggage, materials you carry on, or materials you carry in your pockets when you board an airplane. Persons who violate IATA regulations are subject to fines and criminal prosecution.

IATA regulations are commonly encountered since they regulate materials transported by air and are generally the most restrictive. For these reasons, this guide pays special attention to IATA protocols.

## II. Training Requirements

Federal rules require that anyone wishing to ship biological materials or dry ice must first have shipping training. If you are going to package biological materials or dry ice for shipment or fill out a [Declaration for Dangerous Goods](#) form you must follow the training certification requirements outlined below.

1. ***Read this manual.*** This manual will provide familiarity with the general provisions relating to the regulations and detailed training in the requirements applicable to shipping infectious materials and dry ice.
2. ***Have a current bloodborne pathogen training certification from the Office of Safety and Risk Management.*** This training ensures that you

are familiar with the: hazards presented by infectious materials; proper handling; and emergency response procedures.

3. **Submit to the GSU Biosafety Officer (BSO) an [Intent to Ship Hazardous Materials form](#) (Appendix D).** The BSO will review this form with you and, upon successful completion, will certify you to ship only those materials that are listed on your Intent form.

Shipping regulations change frequently so it is necessary to repeat training certification every two years. Training sessions reviewing the material in this manual are available from GSU Biosafety. Call the BSO at 404-463-0093 to schedule training or to ask questions regarding the shipment of biological materials and dry ice.

### III. Shipping Overview

Follow these steps when shipping biological materials and dry ice.

1. Classify your materials for shipment. See [Section IV](#).
2. Package, mark and label your material(s) appropriately. See [Section V](#).
3. Fill out the [Declaration for Dangerous Goods](#) form. See [Section VI](#).
4. If you are shipping [Select Agents](#), special regulations apply. Consult [Section VII](#).
5. If you plan on importing or exporting biological materials, special regulations apply. Consult [Section VIII](#).

### IV. Shipment Types

For shipment purposes, biological materials are categorized into four classes:

- Infectious substances.
- Diagnostic specimens.
- Biological products.
- Genetically modified organisms and micro-organisms.

Read each material section carefully to determine how to classify a material. If you are shipping a biological material that *cannot cause disease*, infectious substance regulations do not apply. **Note:** All specimens or packaging containing dry ice or liquid nitrogen must be shipped properly (see [Other Packaging Requirements](#)). All samples preserved with flammable or toxic materials, such as ethanol or formalin, must be shipped appropriately.

The regulations allow for a certain amount of professional judgment when classifying biological materials for shipment. IATA does not apply the “Universal Precautions” definition in regard to infectious materials (where all human blood is treated as potentially infectious). For example, blood collected for routine screening is normally classified for shipment as a *diagnostic specimen*. However, blood collected to verify a diagnosis of HIV should be classified as an infectious substance. Keep this in mind when reading the definitions in the following sections. If you are still not sure how to classify a material for shipment after reviewing the following sections, contact GSU Biosafety at 404-463-0093.

## A. Diagnostic Specimens

Diagnostic specimens are human or animal materials that have a relatively low probability of containing pathogens. When these materials are shipped for the purpose of screening, study or diagnosis, they are considered Diagnostic Specimens. These materials include human or animal tissue samples, blood, excreta, etc. Diagnostic specimens are not considered to be a hazardous material by IATA, though the following packaging and shipping requirements apply.

**Note:** Diagnostic specimens must be shipped as an [Infectious Substance](#) when “the source patient or animal has or may have a serious human or animal disease which can be readily transmitted from one individual to another, directly or indirectly, and for which effective treatment and preventative measures are not usually available.”

### 1. Packaging

The basic triple packaging concept applies to diagnostic specimens. Purchase packaging for use with diagnostic specimens. Such packaging must comply with IATA Packing Instruction 650. See [Appendix A](#) for packaging suppliers. Be sure to specify if the shipment is a refrigerated sample (ice packs or dry ice).

For diagnostic specimens, the maximum quantity for primary receptacle is 500 mL or 500 g and outer packaging must not contain more than 4 L or 4 kg.

### 2. Labeling

The sender and recipient’s addresses must be printed and clearly displayed. If packaged with dry ice, a Class 9 diamond label ([Figure 1](#)) must be placed on one side of the outer package. If the package is shipped by air, the following text should appear on the outer container:

“DIAGNOSTIC SPECIMEN PACKED IN COMPLIANCE  
WITH IATA PACKING INSTRUCTION 650.”

## B. Biological Products

Biological products are defined as biological materials used in the prevention, diagnosis, treatment or cure of diseases in humans or animals and certified by the USDA or FDA. Examples of biological products include certain viruses, therapeutic serums, toxins, antitoxins, vaccines, blood and blood products. Biological products that meet the definition of an infectious material must be shipped as an infectious substance. Biological products that have no or very low probability to produce disease and those packaged for final distribution for use for personal health care by medical professionals are not subject to special shipping regulations.

## C. Genetically Modified Organisms and Microorganisms

Genetically modified organisms or micro-organisms that are dangerous, infectious, or are carried by an animal host are regulated for transportation. For the following guidelines, make sure to distinguish those that apply to *organisms* vs. *microorganisms*.

A genetically modified *microorganism* which meets the definition of an infectious substance must be classified as an infectious substance for transportation. For these materials, follow instructions for shipping an infectious substance.

Genetically modified *microorganisms* which are not infectious substances but which are capable of altering animals, plants or microbiological substances in a way that is not normally the result of natural reproduction can be transported when classified as a Miscellaneous Hazard (Class 9). These materials are packed for shipment in the same way as infectious substances, except there are no specific testing requirements for the packaging; this packaging variation is IATA Packing Instruction 913. You may not be able to purchase packages designed for Packing Instruction 913. In this case, use packages designed for infectious substances (Packing Instruction 605) and use a Class 9 label ([Figure 1](#)). These materials are shipped with the proper shipping name, "Genetically modified micro-organisms" and UN 3245. The maximum allowable quantity per primary receptacle is 100 mL or 100 g. There is no maximum net quantity per package.

Genetically modified *organisms* that are known or suspected to be dangerous to humans, animals or the environment cannot be transported by air. Animals which contain, or are contaminated with, genetically modified *microorganisms* or *organisms* that meet the definition of an infectious substance cannot be shipped by air.

## D. Infectious Substances

Infectious substances are materials known to be, or are reasonably suspected to contain, an animal or human pathogen. A pathogen is a virus, microorganism (including its viruses, plasmids, or other genetic elements), proteinaceous infectious particle (prion) or recombinant microorganism (hybrid or mutant) that is known or reasonably expected to cause infectious disease in humans or animals. Microorganisms that are unlikely to cause human or animal disease, i.e. no or very low, individual or community risk do not have to be shipped as infectious substances.

### 1. Packaging

The triple packaging concept, explained in Section V, applies to infectious substances. Purchase packaging approved for use with infectious substances. These packages must comply with IATA Packing Instruction 602. See [Appendix A](#) for a list of packaging suppliers. Make sure to specify if you are shipping a refrigerated sample (ice packs or dry ice). The maximum quantity of infectious substance that can be shipped by air in one package is 4 L or 4 kg. The maximum quantity that may be shipped via passenger aircraft is 50 ml or 50 g.

### 2. Labeling

The sender and recipient's addresses must be printed and clearly displayed. The container should be labeled with the name and telephone number of a person responsible for the shipment. If packaged with dry ice, a Class 9 diamond label ([Figure 1](#)) must be placed on one side of the outer package. The container should be labeled with an infectious substance label ([Figure 2](#)). When shipping over 50 mL or 50 g of infectious substance, you must also put a Cargo Aircraft Label on the outer container ([Figure 3](#)).

When shipping infectious substances by air, you must make advance arrangements with the consignee and the operator to ensure that the shipment can be transported and delivered without delay. In the "[Additional Handling Information](#)" section of the [Shipper's Declaration for Dangerous Goods](#), include the following statement:

"Prior arrangements as required by the IATA Dangerous Goods Regulations 1.3.3.1 have been made."

There are two proper shipping names for infectious substances:

- Infectious substance, affecting humans (UN 2814); and
- Infectious substance, affecting animals (UN 2900).

If you have any reason to believe the infectious material could affect humans you should ship your material as UN 2814. Infectious materials that can affect humans and animals should be shipped as UN 2814. Infectious materials that can only affect animals should be shipped as UN 2900.

Figure 1.



Figure 2.



Figure 3.



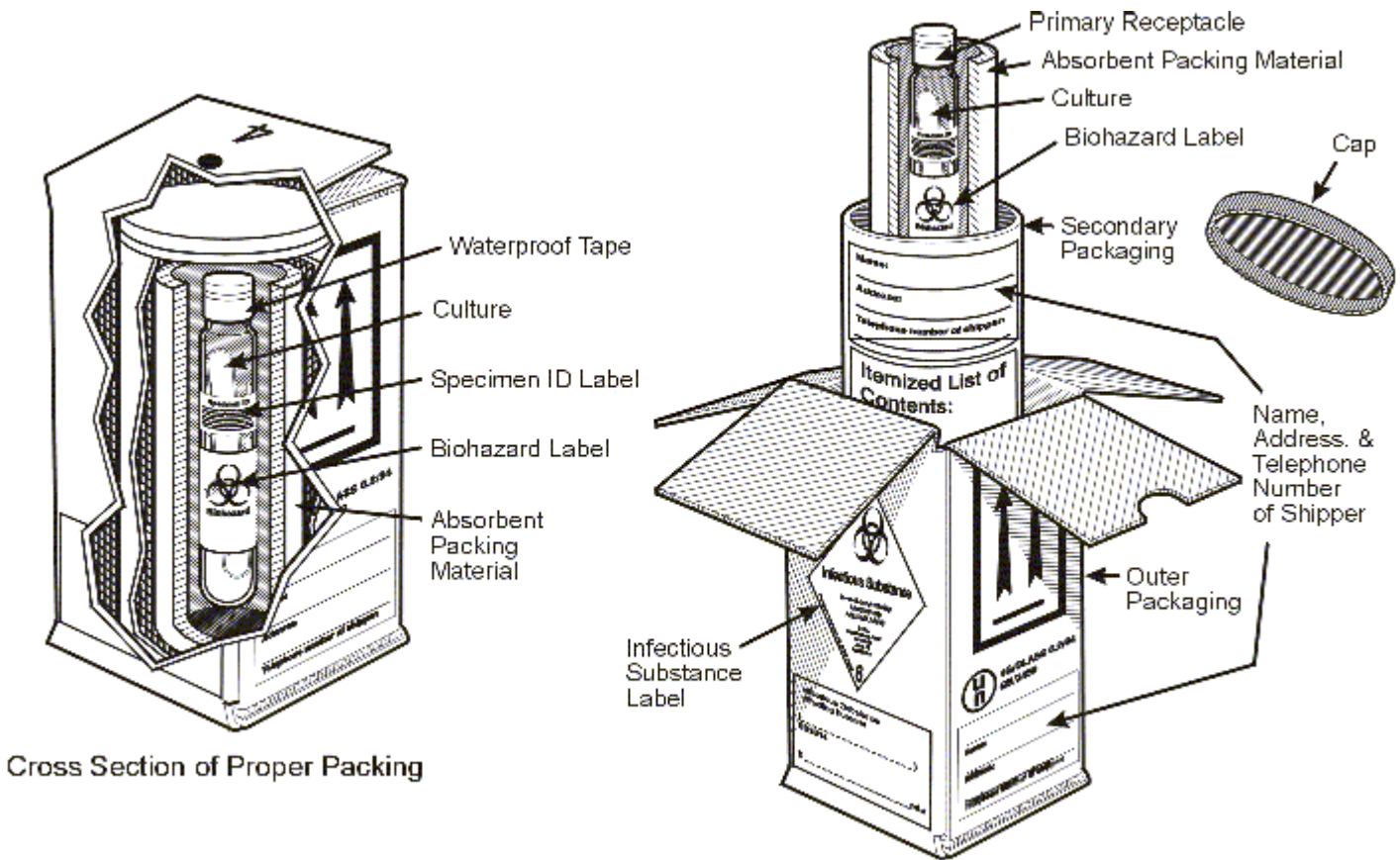
## V. Packaging Biological Materials

Potentially hazardous biological materials must be packaged to withstand leakage of contents, shocks, temperature, pressure changes and other conditions that can occur during ordinary handling in transportation. Packaging your material(s) appropriately is accomplished by purchasing certified packaging. Refer to [Appendix A](#) for vendors that can supply certified packaging for biological materials. When ordering, specify what category of material(s) you will be shipping: *infectious substances*, *diagnostic specimens*, *dry ice*, *ice packs*, etc. Different categories have slightly different packaging needs, but all follow the basic triple packaging requirements described below.

### A. Triple Packaging

Biological materials must be packaged according to the triple packaging principle depicted in [Figure 4](#). The three elements of triple packaging include: *primary receptacle*, *leak-proof secondary container*, and *durable outer container*. Infectious substances, diagnostic specimens and genetically modified micro-organisms must be packaged in this way, with slight variations.

**Figure 4 - Packaging and labeling of biological materials.**



**Cross Section of Proper Packing**

The **primary container** holds the biological material; it must be leak-proof. It must be labeled with the name of the contents. A leak-proof seal, such as a heat seal, skirted stopper or metal crimp, is required. If the container has a threaded lid, it must be secured with waterproof tape. Petri plates cannot be used as primary receptacles. Lyophilized substances can only be shipped in flame sealed glass ampoules or rubber stopped glass vials with metal seals. Packaging purchased for shipping infectious substances or diagnostic specimens usually does not include the primary container.

The **secondary container** holds one or more primary containers, and must also be leak-proof. This container must meet specific United Nations (UN) performance standards. Containers purchased from commercial vendors are designed to meet the necessary standards. If you are shipping any liquid, there must be enough absorbent material in the secondary container to absorb *all* of the liquid in the primary receptacle(s). If multiple primary containers are used, they must be wrapped to prevent contact between them so they do not break during transport.

The **outer container** must be at least 100 mm (4 inches) in the smallest overall external dimension, in order for required markings and labels to fit. The outer package must be of adequate strength for its capacity, mass, and intended use. It must also be certified with a UN specification mark. An **itemized list** of package contents must be included between the outer and secondary container. The outer package should be marked to identify hazardous contents, including the proper shipping name, UN number and net quantity for each substance.

## B. Other Packaging Requirements

**Overpacks.** An overpack can be used to combine several triple packages into one large package. This may be done to save freight charges when shipping multiple samples. Each triple package inside the overpack must be properly marked and labeled. The outside of the overpack must bear the same markings and labels as the triple packages within. If packed with dry ice, the total net quantity of dry ice must be listed on the outer container. The overpack must also be marked with the statement:

“Inner Packages Comply with Prescribed Specifications.”

**Ice and Dry Ice.** If a shipment includes ice or dry ice, special packaging must be purchased. If shipping with ice, the packaging must be leak-proof. If dry ice is used, the outer packaging must allow for the release of carbon dioxide gas when the solid sublimates. Ice or dry ice must be placed outside the secondary packaging. Interior supports must be provided to secure the secondary container as the refrigerant melts/sublimates. Dry ice is considered a miscellaneous hazard (Class 9) by IATA. Packages containing dry ice must bear a Class 9 label and be marked with the proper shipping name, UN number and net quantity, e.g., Dry Ice, UN1845, 3 KG. Certified packages for dry ice most likely will be pre-labeled and marked. A Declaration for Dangerous Goods is not required for shipments in which dry ice is the only hazardous material. Dry ice is included on the Declarations for shipments which include other hazardous materials such as infectious substances.

**Liquid Nitrogen.** Biological materials can be shipped in liquid nitrogen or dry shippers, which are insulated packages containing refrigerated liquid nitrogen fully absorbed in a porous material. Special packing regulations apply to shipments containing nitrogen. Contact EHS if you need to ship materials with liquid nitrogen.

## VI. Shipper’s Declaration for Dangerous Goods

A [Declaration for Dangerous Goods](#) form must be completed when shipping infectious substances or genetically modified micro-organisms. A Declaration is not required for shipments in which dry ice is the only hazardous material. Dry ice should be listed on Declarations for shipments containing infectious substances or

genetically modified micro-organisms. A Declaration is not required if you are shipping diagnostic specimens (unless it must be classified as an infectious substance, see [note](#)). The Declaration is included with purchased shipping materials, or provided by the carrier. For Federal Express, these forms must be typed or computer generated. Improperly completed declarations are the most common cause of package refusal.

Refer to the Shipper's Declaration for Dangerous Goods in [Appendix B](#) for an explanation of each section:

- A. Shipper:** Enter your full name, address and telephone number.
- B. Consignee:** Enter full name and address of recipient. When shipping infectious substances, include the text, "Person responsible for the shipment," followed by your name and phone number.
- C. Transport Details:** Indicate here if your shipment is restricted to cargo aircraft only (if it is more than 50 ml or 50 g of an infectious substance). Airport of departure and airport of destination will be filled out by the carrier, leave blank.
- D. Shipment Type:** Cross out "radioactive" to indicate you are shipping a non-radioactive substance.
- E. Proper Shipping Name:** Enter the proper shipping name exactly as it appears in [Table 1](#).
- F. Class or Division:** Enter appropriate hazard class as found in Table 1.
- G. UN or ID Number:** Enter appropriate UN number as found in Table 1.
- H. Packing Group:** For dry ice, enter "III" in this column. Biological materials are not assigned packing groups.
- I. Subsidiary Risk:** Leave this column blank.
- J. Quantity and Type of Packaging:** Enter the net quantity for each material here. Use only metric units. At the bottom of this column, indicate the number and type of packages used (usually, "all packed in one fibreboard box."). Do not spell like "fiberboard." If using an overpack, indicate here with "Overpack Used."
- K. Packing Instructions:** Enter appropriate packing instruction number. Refer to Table 1.
- L. Authorization:** Leave this column blank.
- M. Additional Handling Instructions:** Three things are required in this section:
  - 1. The statement "Emergency Contact: Chem-Tel 1(800) 255-3924"
  - 2. The statement "Prior arrangements as required by the IATA Dangerous Goods Regulations 1.3.3.1 have been made."
  - 3. The statement "Prepared according to ICAO/IATA."
- N. Signature and date.**

Declaration forms must be filled out in triplicate. Keep one copy and supply two to the carrier. Regulations require that you must retain your copy for *375 days*. A completed sample declaration is found in [Appendix C](#). Feel free to contact GSU Biosafety with any questions on how to fill out the declaration.

**Table 1.** Summary of Shipping Information

Shipment Type	Proper Shipping Name	UN Number	Hazard Class	Packing Group (PG)	Packing Instruction (PI)	Max. Net qty./pkg. for Passenger Aircraft	Max. Net qty./pkg. for Cargo Aircraft
Infectious substance, affecting humans and possibly animals	Infectious substance, affecting humans ( <i>technical name</i> )	UN 2814	6.2	-	602	50 ml or 50 g	4 L or 4 kg
Infectious substance, affecting only animals (not humans)	Infectious substance, affecting animals ( <i>technical name</i> )	UN 2900	6.2	-	602	50 ml or 50 g	4 L or 4 kg
Diagnostic or clinical specimen	Diagnostic specimens	UN 3373	-	-	650	4 L or 4 kg	4 L or 4 kg
Dry Ice	Dry Ice or Carbon Dioxide, solid	UN 1845	9	III	904	200 kg	200 kg
Non-infectious, transducing genetically modified <i>micro-organisms</i>	Genetically modified micro-organisms	UN 3245	9	-	913	No limit	No limit

## **VII. CDC Select Agents**

The U.S. Department of Health and Human Services has developed a list of biological agents (see [Appendix F](#)) that have the potential to pose a severe threat to public health. Special regulations apply to the use and transfer of these materials, including registration with the UNH Institutional Biosafety Committee and the Centers for Disease Control and Prevention. If you are planning to, or currently work with, any of the select agents listed below and have not registered, contact the GSU Biosafety Officer at 404-463-0093. Specific shipping restrictions apply to these agents (not discussed in this document).

## **VIII. Importing and Exporting Biological and Infectious Agents**

Receiving and sending animals and animal-derived materials, infectious or biohazardous agents, biological toxins, and genetically modified organisms require the approval of federal agencies such as the Centers for Disease Control and Prevention (CDC), the United States Department of Agriculture (USDA), or the US Fish and Wildlife Service (USFWS). Regulations that govern the transfer of biological materials help to minimize or eliminate the possible threats to public health and agriculture.

### **A. Importation of Infectious Agents**

For agents infectious to humans, CDC permit applications are found online at: <http://www.cdc.gov/od/ohs>. These agents include any infectious agent known or suspected to cause disease in humans, unsterilized specimens of human or animal tissues (including blood and other fluids), or vectors including infectious animals, bats, insects, arthropods and snails (see [Appendix F](#) for *HHS Select Infectious Agents*).

### **B. Importation of Plant/Agricultural Pests**

A USDA/APHIS permit is required to import or domestically transfer a plant pest, plant biological agent, or any material that might contain them. Some items that are included are bees, biological control organisms, butterflies and moths, genetically engineered plants and microorganisms, certain fruits and vegetables, noxious weeds, snails and slugs, soil, and wood products (see [Appendix F](#) for *APHIS Plant Pathogens* or *USDA High Consequence Livestock Pathogens or Toxins*). Consult the following web page for more information and permit applications: <http://www.aphis.usda.gov/ppq/permits>.

### **C. Importation of Fish and Wildlife**

For transporting fish, wildlife, or endangered species, use the USFWS form 3-177 and 3-177A found at: <http://forms.fws.gov/display.cfm?number1=100>.

**D. Export Guidelines for Infectious Agents of Humans, Animals, Plants, and Related Materials**

The export of infectious agents and related materials is governed by the following federal regulation: 15 CFR Parts 730 to 799. An export license is required from the Department of Commerce, when exporting infectious agents of human, plant, and animal diseases, including genetic material, and products which might be used for culture of large amounts of agents. Consult the following web page for specific items and procedures: <http://www.bxa.doc.gov>.

## Appendix A – Manufacturers of Certified Shipping Containers for Infectious Substances, Diagnostic Specimens & Dry Ice

Air Sea Atlanta  
1234 Logan Circle  
Atlanta GA 30318  
Phone: 404-351-8600  
<http://www.airseatlanta.com>

All-Pak, Inc.  
Corporate One West  
1195 Washington Pike  
Bridgeville, PA 15017  
Phone: 800-245-2283  
<http://www.all-pak.com>

Casing Corporation  
P.O. Box 820369  
Dallas, Texas 75382  
Phone: 800-358-6866  
<http://www.casingcorp.com>

CARGOPak Corporation  
3215-A Wellington Court  
Raleigh, NC 27615  
Phone: 800-266-0652  
<http://www.cargopak.com>

DG Supplies, Inc.  
5 Boxal Drive  
Cranbury, NJ 08512  
Phone: 800-347-7879  
<http://www.dgsupplies.com>

EXAKT Technologies, Inc.  
7416 N Broadway Ext.,  
Suite E  
Oklahoma City, OK 73116  
Phone: 800-923-9123  
<http://www.exaktpak.com>

HAZMATPAC, Inc  
5301 Polk St., Bldg 18  
Houston, TX 77023  
Phone: 800-347-7879  
<http://www.hazmatpac.com>

Inmark, Inc.  
220 Fisk Drive S.W.  
Atlanta, GA 30336-0309  
Phone: 800-646-6275  
<http://www.inmarkinc.com>

Polyfoam Packers  
Corporation  
2320 S. Foster Avenue  
Wheeling, IL 60090  
Phone: 888-765-9362  
<http://www.polyfoam.com>

SAF-T-PAK, Inc.  
10807 - 182 Street  
Edmonton, Alberta, Canada,  
T5S 1J5  
Phone: 800-814-7484  
<http://www.saftpak.com>

Source Packaging of New  
England, Inc.  
405 Kilvert St.  
Warwick, RI 02886  
Phone: 800-200-0366  
<http://www.sourcepak.com>

Therapak Corporation  
1440 Arrow Highway, Unit A  
Irwindale, California 91706  
Phone: 888-505-7377  
<http://www.therapak.com>

## Appendix B – Declaration of Dangerous Goods Guide

### SHIPPER'S DECLARATION FOR DANGEROUS GOODS

<b>Shipper</b>  <div style="text-align: center; font-size: 2em; font-weight: bold;">A</div>					Air Waybill No.  Page ____ of ____ pages  Shipper's Reference Number ( <i>optional</i> ):		
<b>Consignee</b>  <div style="text-align: center; font-size: 2em; font-weight: bold;">B</div>					<i>Area for optional use for company logo name and address</i>		
Two completed and signed copies of this Declaration must be handed to <i>the operator</i>					<div style="font-weight: bold; font-size: 1.2em;">WARNING</div> <p>Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.</p>		
<b>TRANSPORT DETAILS C</b>							
This shipment is within the limitations prescribed for: ( <i>delete non-applicable</i> )		Airport of Departure					
PASSENGER AND CARGO AIRCRAFT	CARGO AIRCRAFT ONLY						
<b>Airport of Destination:</b>					Shipment type: ( <i>delete non-applicable</i> ) <span style="float: right; font-weight: bold; font-size: 1.2em;">D</span> <input type="checkbox"/> NON-RADIOACTIVE <input type="checkbox"/> RADIOACTIVE		
<b>NATURE AND QUANTITY OF DANGEROUS GOODS</b>							
Dangerous Goods Identification					Quantity and type of packing	Packing Inst.	Authorization
Proper Shipping Name	Class or Division	UN or ID No.	Pack- ing Group	Subsidiary Risk			
E	F	G	H	I	J	K	L
<b>Additional Handling Information:</b>							
M							
<b>Emergency Telephone Number:</b>							
I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name, and are classified, packaged, marked, and labeled/placarded, and are in all respects in the proper condition for transport according to the applicable international and national governmental regulations.					<b>Name/Title of Signatory</b>  <b>Place and Date</b>  <b>Signature</b> ( <i>see warning above</i> )		
					N		

## Appendix C – Example Declaration Form

### SHIPPER'S DECLARATION FOR DANGEROUS GOODS

<b>Shipper</b> Dr. Joe Germ 123 Science Building Georgia State University Atlanta, GA 30303					Air Waybill No.  Page <u> 1 </u> of <u> 1 </u> pages  Shipper's Reference Number <i>(optional)</i> :					
<b>Consignee</b> Dr. Jane Infection 987 Research Building Anytown University Anywhere, USA					<i>Area for optional use for company logo name and address</i>					
Two completed and signed copies of this Declaration must be handed to <i>the operator</i>					<b>WARNING</b>  Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.					
<b>TRANSPORT DETAILS</b>										
This shipment is within the limitations prescribed for: <i>(delete non-applicable)</i>			Airport of Departure  ATL							
PASSENGER AND CARGO AIRCRAFT	<input checked="" type="checkbox"/> CARGO AIRCRAFT ONLY									
<b>Airport of Destination:</b> ANY					<i>Shipment type: (delete non-applicable)</i> <input type="checkbox"/> NON-RADIOACTIVE <input checked="" type="checkbox"/> RADIOACTIVE					
<b>NATURE AND QUANTITY OF DANGEROUS GOODS</b>										
Dangerous Goods Identification										
Proper Shipping Name	Class or Division	UN or ID No.	Pack- ing Group	Subsi- diary Risk	Quantity and type of packing	Packing Inst.	Authorization			
Infectious substance, affecting humans (Hepatitis B virus)	6.2	UN2814			50 ml	602				
Dry ice	9	UN1845	III		3 kg	904				
<b>Additional Handling Information:</b> Prepared according to ICAO/IATA; prior arrangements as require by IATA Dangerous Goods Regulations 1.3.3.1 have been made.										
<b>Emergency Telephone Number:</b> ChemTel, 1-800-255-3924										
I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name, and are classified, packaged, marked, and labeled/placarded, and are in all respects in the proper condition for transport according to the applicable international and national governmental regulations.					<b>Name/Title of Signatory:</b> Dr. Joe Germ, Professor  <b>Place and Date:</b> Atlanta, GA 02/17/04  <b>Signature</b> <i>(see warning above)</i>					

## Appendix D – Intent to Ship Hazardous Materials

After reading the *GSU Shipment of Biological Materials and Dry Ice Manual*, fill out this form to qualify to ship dangerous materials at GSU. The BSO will review this completed form and upon successful completion and demonstration of knowledge of applicable regulations you will be certified to ship those materials designated on this form.

1. What regulated material(s) might you ship via mail or courier service? List all hazardous materials that you intend to ship. Also, list the mailing service you intend to use.
2. What packaging will you use to ship your material(s)? Include company name and product number for chosen packaging for each material you intend to ship.
3. Check those that should appear on your package:
  - Class 6.2 label
  - Class 9 label
  - Cargo Aircraft label
  - Dry ice, UN 1845, net weight \_\_\_\_\_ kg
  - Infectious substance, affecting humans (*technical name*), UN 2814, net quantity \_\_\_\_\_
  - Infectious substance, affecting animals (*technical name*), UN 2900, net quantity \_\_\_\_\_
  - Name, Address and Phone Number of Shipper
  - Name and Address of Consignee
  - Name and Phone Number of Person Responsible for Shipment
  - "Inner Packages Comply with Prescribed Specifications."
  - Genetically modified micro-organisms, UN 3245, net quantity \_\_\_\_\_
  - "Diagnostic Specimen Packed in Compliance with IATA Packing Instruction 650"
4. Fill out attached [Declaration for Dangerous Goods](#) form (if your shipments require one). An example of each material you intend to ship must be included in the "Nature and Quantity of Dangerous Goods" section.

I understand the hazards associated with the materials noted above. Also, I understand the shipping requirements for those materials, as outlined in this manual.

<b>Print name:</b>	
<b>Signature:</b>	
<b>Date:</b>	
<b>Please return to GSU Biosafety – campus mail: MSC 3A0036; in person: Alumni Hall, Suite 215</b>	

## Appendix E – Blank Declaration for Dangerous Goods

### SHIPPER'S DECLARATION FOR DANGEROUS GOODS

<b>Shipper</b>					Air Waybill No.				
					Page ____ of ____ pages				
					Shipper's Reference Number <i>(optional)</i> :				
<b>Consignee</b>					<i>Area for optional use for company logo name and address</i>				
Two completed and signed copies of this Declaration must be handed to <i>the operator</i>					<b>WARNING</b>  Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.				
<b>TRANSPORT DETAILS</b>									
This shipment is within the limitations prescribed for: <i>(delete non-applicable)</i>				Airport of Departure					
PASSENGER AND CARGO AIRCRAFT	CARGO AIRCRAFT ONLY								
<b>Airport of Destination:</b>					<i>Shipment type: (delete non-applicable)</i> <input type="checkbox"/> NON-RADIOACTIVE <input type="checkbox"/> RADIOACTIVE				
<b>NATURE AND QUANTITY OF DANGEROUS GOODS</b>									
Dangerous Goods Identification					Quantity and type of packing	Packing Inst.	Authorization		
Proper Shipping Name	Class or Division	UN or ID No.	Pack- ing Group	Subsi- dary Risk					
<b>Additional Handling Information:</b>									
<b>Emergency Telephone Number:</b>									
I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name, and are classified, packaged, marked, and labeled/placarded, and are in all respects in the proper condition for transport according to the applicable international and national governmental regulations.					<b>Name/Title of Signatory</b>				
					<b>Place and Date</b>				
					<b>Signature</b> <i>(see warning above)</i>				

# Appendix F – APHIS Plant Pathogens, HHS Select Infectious Agents & USDA High Consequence Livestock Pathogens/Toxins

## Viruses

1. African horse sickness virus <sup>3</sup>
2. African swine fever virus <sup>3</sup>
3. Akabane virus <sup>3</sup>
4. Avian influenza virus (highly pathogenic) <sup>3</sup>
5. Blue tongue virus (exotic) <sup>3</sup>
6. Camel pox virus <sup>3</sup>
7. Cercopithecine herpesvirus 1 (Herpes B virus) <sup>2</sup>
8. Classical swine fever virus <sup>3</sup>
9. Crimean-Congo haemorrhagic fever virus <sup>2</sup>
10. Eastern equine encephalitis virus <sup>4</sup>
11. Ebola viruses <sup>2</sup>
12. Foot and mouth disease virus <sup>3</sup>
13. Goat pox virus <sup>3</sup>
14. Japanese encephalitis virus <sup>3</sup>
15. Lassa fever virus <sup>2</sup>
16. Lumpy skin disease virus <sup>3</sup>
17. Malignant catarrhal fever virus <sup>3</sup>
18. Marburg virus <sup>2</sup>
19. Menangle virus <sup>3</sup>
20. Monkeypox virus <sup>2</sup>
21. Newcastle disease virus (VVND) <sup>3</sup>
22. Nipah and Hendra complex viruses <sup>4</sup>
23. Peste des petits ruminants virus <sup>3</sup>
24. Plum pox potyvirus <sup>1</sup>
25. Rift Valley fever virus <sup>4</sup>
26. Rinderpest virus <sup>3</sup>
27. Sheep pox virus <sup>3</sup>
28. South American haemorrhagic fever viruses [(Junin, Machupo, Sabia, Flexal, Guanarito)] <sup>2</sup>
29. Swine vesicular disease virus <sup>3</sup>
30. Tick-borne encephalitis complex (flavi) viruses [Central European Tick-borne encephalitis, Far Eastern Tick-borne encephalitis (Russian Spring and Summer encephalitis, Kyasanur Forest disease, Omsk Hemorrhagic Fever)] <sup>2</sup>
31. Variola major virus (Smallpox virus) and Variola minor (Alastrim) <sup>2</sup>
32. Venezuelan equine encephalitis virus <sup>4</sup>
33. Vesicular stomatitis virus (exotic) <sup>3</sup>

## Prion

1. Bovine spongiform encephalopathy agent <sup>3</sup>

## Toxins

1. Abrin <sup>2</sup>
2. Botulinum neurotoxins <sup>4</sup>
3. *Clostridium perfringens* epsilon toxin <sup>4</sup>
4. Conotoxins <sup>2</sup>
5. Diacetoxyscirpenol <sup>2</sup>
6. Ricin <sup>2</sup>
7. Saxitoxin <sup>2</sup>
8. Shigatoxin and Shiga-like ribosome inactivating proteins <sup>4</sup>
9. Staphylococcal enterotoxins <sup>4</sup>
10. Tetrodotoxin <sup>2</sup>
11. T-2 toxin <sup>4</sup>

## Bacteria

1. *Bacillus anthracis* <sup>4</sup>
2. Botulinum neurotoxin producing species of *Clostridium* <sup>4</sup>
3. *Brucella abortus* <sup>4</sup>
4. *Brucella melitensis* <sup>4</sup>
5. *Brucella suis* <sup>4</sup>
6. *Burkholderia mallei* <sup>4</sup>
7. *Burkholderia pseudomallei* <sup>4</sup>
8. *Coxiella burnetii* <sup>4</sup>
9. *Cowdria ruminantium* (Heartwater) <sup>3</sup>
10. *Francisella tularensis* <sup>4</sup>
11. *Liberobacter africanus*, *Liberobacter asiaticus* <sup>1</sup>
12. *Mycoplasma capricolu*/M. F38/ *M. mycoides capri* (contagious caprine pleuropneumonia agent) <sup>3</sup>
13. *Mycoplasma mycoides mycoides* (contagious bovine pleuropneumonia agent) <sup>3</sup>
14. *Ralstonia solanacearum* race 3 biovar <sup>2 1</sup>
15. *Rickettsia prowazekii* <sup>2</sup>
16. *Rickettsia rickettsii* <sup>2</sup>
17. *Xanthomonas oryzae* pv. *oryzicola* <sup>1</sup>
18. *Xylella fastidiosa* (citrus variegated chlorosis strain) <sup>1</sup>
19. *Yersinia pestis* <sup>2</sup>

## Fungi

1. *Coccidioides immitis* <sup>4</sup>
2. *Coccidioides posadasii* <sup>2</sup>
3. *Peronosclerospora philippinensis* <sup>1</sup>
4. *Phakopsora pachyrhizi* <sup>1</sup>
5. *Sclerophthora rayssiae* var *zeae* <sup>1</sup>
6. *Synchytrium endobioticum* <sup>1</sup>

## Exemptions

The following agents or toxins are exempt if the aggregate amount under the control of a principal investigator does not, at any time, exceed:

- 0.5 mg of botulinum neurotoxins
- 5 mg of *Staphylococcal* enterotoxins
- 100 mg of abrin, *Clostridium perfringens* epsilon toxin, conotoxin, ricin, saxitoxin, shigatoxin, shiga-like ribosome inactivating protein, and tetrodotoxin
- 1,000 mg of diacetoxyscirpenol and T-2 toxin

The following agents or toxins are also exempt:

- Any agent or toxin that is in its naturally occurring environment provided it has not been intentionally introduced, cultivated, collected, or otherwise extracted from its natural source.
- Non-viable select agent organisms or nonfunctional toxins.
- The vaccine strains of Junin virus (Candid #1), Rift Valley fever virus (MP-12), Venezuelan Equine encephalitis virus vaccine strain TC-83.

The medical use of toxins for patient treatment is exempt.

## Genetic Elements, Recombinant Nucleic Acids, and Recombinant Organisms

1. Select agent viral nucleic acids (synthetic or naturally derived, contiguous or fragmented, in host chromosomes or in expression vectors) that can encode infectious and/or replication competent forms of any of the select agent viruses.
2. Nucleic acids (synthetic or naturally derived) that encode for the functional form(s) of any of the listed toxins if the nucleic acids: a) are in a vector or host chromosome; b) can be expressed *in vivo* or *in vitro*, or c) are in a vector or host chromosome and can be expressed *in vivo* or *in vitro*.
3. Listed viruses, bacteria, fungi, and toxins that have been genetically modified.

## Other Restrictions

1. Experiments utilizing recombinant DNA that involve the deliberate transfer of a drug resistance trait to the listed agents that are not known to acquire the trait naturally, if such acquisition could compromise the use of the drug to control disease agents in humans, veterinary medicine, or agriculture.
2. Experiments involving the deliberate formation of recombinant DNA containing genes for the biosynthesis of listed toxins lethal for vertebrates at an LD<sub>50</sub> < 100 ng/kg body weight.

<sup>1</sup> APHIS Plant Pathogen    <sup>2</sup> HHS Select Infectious Agent    <sup>3</sup> USDA High Consequence Livestock Pathogen or Toxin    <sup>4</sup> USDA-HHS Overlap Agent