

Introduction

2. ***Have a current bloodborne pathogen training certification from OES.*** This training ensures that you are familiar with the hazards presented by infectious materials, proper handling, and emergency response procedures.
3. ***Submit to OES an [Intent to Ship Hazardous Materials form](#) ([Appendix B](#)).*** OES 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 guideline are available from OES. Call OES at 578 8507 to schedule training or to ask questions regarding the shipment of biological materials and dry ice.

Shipping Overview

Follow these steps when shipping biological materials and dry ice.

Classify your materials for shipment. See Shipment Types.

1. Package, mark and label your material(s) appropriately. See Packaging
2. Fill out the [Declaration for Dangerous Goods](#) form. Available from Carrier
3. If you are shipping [Select Agents](#), special regulations apply.
4. If you plan on importing or exporting biological materials, special regulations apply.

Shipment Types

For shipment purposes, biological materials are categorized into one of the following categories:

- Unregulated biological material;
- Category A infectious substances;
- Category B infectious substances;
- Patient specimens; or
- Genetically modified organisms and microorganisms.

Read each material section carefully to determine if you are shipping a biological material.

A. Unregulated Biological Material

The materials listed below are not subject to IATA or DOT infectious substance shipping regulations. However, these materials may require a permit for shipment abroad. Please check with the OES if you have questions about these materials. All shipments of blood and blood products must be labeled with a biohazard symbol.

- Substances which do not contain infectious substances or which are unlikely to cause disease in humans or animals;
- Non-infectious biological materials from humans, animals, or plants. (non-infectious cells, tissue cultures, blood or plasma from individuals not suspected of having an infectious disease, DNA, RNA, or other genetic elements)
- Substances containing microorganisms, which are non-pathogenic to humans or animals;
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1. Category A Infectious Substances

Category A infectious substances are capable of causing permanent disability, life threatening or fatal disease in humans or animals when exposure occurs. Category A infectious substances are shipped as infectious substances, affecting humans (UN2814) or animals (UN2900)

a. Packaging

The triple packaging concept, explained below 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 cargo 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.

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2. Category B Infectious Substances

Category B infectious substances are materials that are infectious, but do not meet the standard for inclusion in Category A. Category B infectious substances are assigned to UN3373.

a. Packaging

The triple packaging concept, explained below 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 cargo in one package is 4 L or 4 kg.

b. Labeling

The outer container of a category A infectious substance shipment must display the following information:

- sender and recipient's full name and addresses.
- The words "Biological Substance, Category B"
- UN3373 label
- The text "Person responsible: " and 24 hour phone number.
- If packaged with dry ice, a Class 9 diamond label

3. Patient Specimens

Patient specimens that have a minimal likelihood of containing pathogens are exempt from many shipping requirements. Professional judgment is used to determine if a specimen contains pathogens and should be based on the patient's medical history, symptoms, etc.

If there is more than a minimal likelihood that a patient specimen contains pathogens, it must be shipped as a category A or B substance.

1. Labeling

The outer package must be marked with "exempt human specimen", or "exempt animal specimen".

C. 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 or animal health care by medical professionals are not subject to special shipping regulations but should be shipped safely.

D. Genetically Modified Organisms and Microorganisms

Genetically modified organism

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 OES if you need to ship materials with liquid nitrogen.

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 for an explanation of each section:

- A **Shipper:** Enter your full name, address and telephone number.
- a. **Consignee:** Enter full name and address of recipient. When shipping infectious substances, some shippers may require you to include the text, "Person responsible for the shipment," followed by your name and phone number.
- b. **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.
- c. **Shipment Type:** Cross out "radioactive" to indicate you are shipping a non-radioactive substance.
- d. **Proper Shipping Name:** Enter the proper shipping name exactly as it appears in [Table 1](#).
- e. **Class or Division:** Enter appropriate hazard class as found in Table 1.
- f. **UN or ID Number:** Enter appropriate UN number as found in Table 1.

The U.S. Department of Health and Human Services and USDA have developed a list of biological agents/toxins (see [Appendix D](#)) 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 LSU Interinstitutional Biological and Recombinant DNA Safety Committee (IBRDS) and the Centers for Disease Control and Prevention and/or USDA/APHIS. If you are planning to, or currently work with, any of the select agents listed below and have not registered, contact OES. Specific shipping restrictions apply to these agents/toxins.

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.

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 D](#) for *HHS Select Infectious Agents*).

A USDA/APHIS permit is required to import or domestically transfer a plant pest, plant or animal 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 D](#) for *APHIS Plant Pathogens* or *USDA High Consequence Livestock Pathogens or Toxins*). Consult the following web page for more information and permit applications: <http://ups.com/using/services/export/prohibited.html>

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>.

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>.

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

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

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

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

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

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

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

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

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

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

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

Appendix B – Intent to Ship Hazardous Materials

After reading the *LSU Shipment of Biological Materials and Dry Ice Guideline*, fill out this form to qualify to ship dangerous materials at LSU. OES 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.

Declaration of dangerous goods forms can be found on the carrier's website. An example is FedEx at:
<http://www.fedex.com/us/services/options>

1. African horse sickness virus ³
2. African swine fever virus ³
3. Akabane virus ³
4. Avian influenza virus (highly pathogenic) ³
5. Blue tongue virus (exotic) ³
6. Camel pox virus ³
7. Cercopithecine herpesvirus 1 (Herpes B virus) ²
8. Classical swine fever virus ³
9. Crimean-Congo haemorrhagic fever virus ²
10. Eastern equine encephalitis virus ⁴
11. Ebola viruses ²
12. Foot and mouth disease virus ³
13. Goat pox virus ³
14. Japanese encephalitis virus ³
15. Lassa fever virus ²
16. Lumpy skin disease virus ³
17. Malignant catarrhal fever virus ³
18. Marburg virus ²
19. Menangle virus ³

