

Shipping Infectious Substances, Category A (OHS_BIO202) Course Material

Introduction

Welcome to the **Shipping Infectious Substances, Category A (OHS_BIO202)** Training Course. This course is **REQUIRED** for anyone that will be shipping samples that are considered Infectious Substances, Category A.

Any UAB employee who participates in the shipping process for Infectious Substances, Category A, **MUST COMPLETE** training every two years **OR IF** regulations change. The shipping process can include packaging, preparing the paperwork, assembling the package, labeling, or any other activity associated with transport. This is required by ICAO and IATA,

A copy of the completed training certificate must be maintained in the laboratory files and presented to the proper authorities upon request.

Additional shipping training is **REQUIRED** for anyone that will be:

- Shipping with Dry Ice (BIO200)
- Shipping Biological Substances, Category B (BIO202)



Failure to properly pack and ship materials is a **VIOLATION** of the law and is punishable with fines and/or imprisonment.

Objectives

At the conclusion, participants should be able to:

1. Identify and properly classify Infectious Substances, Category A.
2. Correctly pack samples with appropriate primary and secondary containment.
3. Use correct Marks and Labels on packaging.
4. Properly complete the appropriate shipping documents.
5. Follow necessary safety guidelines to avoid any accidents.

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Overview

When shipping Infectious Substances, Category A, you are bound by regulations that come from several International and National agencies. Even though there are multiple agencies and regulations, they have been coordinated (or harmonized) to cause as little confusion as possible. These regulatory bodies ensure that infectious substances or materials are transported as safely as possible, most notably by air.

Regarding the shipping of Infectious Substances, Category A, the University of Alabama at Birmingham follows both the:

- International Air Transportation Association Dangerous Goods Regulations
- United States Department of Transportation Hazardous Materials Title 49 Code of Federal Regulations Parts 171-180

Shipper's Responsibilities

When shipping Infectious Substances, Category A, from UAB, you have the responsibility to properly:

- Classify the substance or material
- Identify the substance or material
- Select the appropriate packaging
- Pack the substance or material
- Mark and Label the package correctly
- Complete documentation
- Make arrangements with your chosen courier and receiver. This includes obtaining permits if required. For example, both the USDA and CDC have permit requirements.

Classification

Classification is necessary in order to follow International and National regulations. Classification of an item to be shipped is used to identify the **ACTUAL** hazard and **NOT** the substance itself.

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Infectious Substances, Category A

Infectious Substances, Category A are those which are capable of posing a risk to health and safety.

Uncontrolled release of these substances into the environment may be life-threatening to humans and/or have similar high consequences for property, animals, and the environment. Work with these substances usually requires high containment.

You can use the terms in the [Shipping Glossary](#), [Examples of Infectious Substances in Category A or B Job Aid](#), and the [Classification Flowchart](#) to help properly classify your sample.

Genetically Modified Organisms (GMO)

If your sample happens to be a Genetically Modified Organisms (GMO) **AND** meets the classification of an Infectious Substance, Category A, then it **MUST** be classified and shipped as an Infectious Substances, Category A.

Identification

UN and PSN

United Nations (UN) Number

UN Numbers are required as a part of the identification process. These numbers are taken from the List of Dangerous Goods, and are used to identify a substance or group of substances. This UN Number always precedes the Proper Shipping Name (PSN):

- UN 2900 Infectious Substances, affecting animals
- UN 2814 Infectious Substances, affecting humans

Proper Shipping Name (PSN)

The Proper Shipping Name (PSN) is assigned by IATA, ICAO, and 9 CFR, and is the name used on shipping documents to describe substances. Infectious Substances, Category A have two Proper Shipping Names – one refers to Infectious Substances affecting animals and the other affecting humans.

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- The PSN, **Infectious Substances, affecting animals** (along with the preceding UN 2900 number), refers to the Infectious Substances that affect animals and is **ONLY ALLOWED** if the Infectious Substance is an animal pathogen and can in no way pose a threat to humans.
- The PSN, **Infectious Substances, affecting humans** (along with the preceding UN 2814 number), is used if the Infectious Substance can pose a threat to humans **AS WELL AS** animals.

Technical Name

The Technical Name is the substance's Genus and Species. This must be added to the end of the Proper Shipping Name on the Shipper's Declaration when shipping Infectious Substances, Category A.

It should be written or typed in parentheses. For example, an isolate of West Nile Virus cultured from a mouse **HAS** the ability to affect a human. Therefore, the Shipping Document for this sample would show

UN 2814 Infectious Substance, affecting humans (West Nile Virus)

Remember, the Technical Name goes on the Shipper's Declaration – **NOT** the package!

Packaging System

Selecting the Proper Packaging

When choosing the correct packing materials, only use packaging in the tested and certified configuration. For example, you **CANNOT** ship Infectious Substances, Category A in an EXAKT-PAK™ secondary container and in a SAF-T-PAK™ outer container (fiberboard box) since the containers have not been tested and certified together.

Most manufactures **WILL NOT** test their products with those of their competitors. If you have questions about your containers/or boxes, contact the manufacture about their testing results.

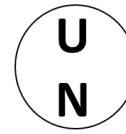
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Disposable components of a packaging system **MUST** be replaced by components from the same vendor that have been tested and certified for **THAT** packaging system. Substituting alternative products is a **VIOLATION OF THE LAW!**

Outside Packaging

Never use boxes except those that conform to approved standards. Always look for the UN mark. It indicates that the box has been tested and meets standards. If you have questions about which boxes are approved, please call OH&S at (205) 934-2487.



4G/CLASS 6.2/13
CAN?SAF-T-PAK 8-39

Inside Packaging

Either the Primary or Secondary container must be able to withstand internal pressure of 95 kPa in a temperature of -40 degrees Centigrade (-40°C) to 55 degrees Centigrade (55°C). Kilopascal (kPa) is a unit of pressure measurement like Pounds per Square Inch (PSI).



All packaging components for Infectious Substances, Category A must be assembled per the manufacturer's closing instructions specific to the packaging system purchased.

Marking and Labeling

General Information

Marks and Labels are used to provide information about the contents of the package, the nature of the hazard, and any special handling requirements. Any Marks and Labels should be durable, placed so that they are completely visible, not obscured by any other Labels or Markings, and placed all on the same face of the package, if possible.

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Infectious Substances, Category A

Infectious Substances, Category A shipments **MUST** have the following information on the outer package:

- An Infectious Substance, Category A black & white Diamond-on-Point Label with the words:
 - **In case of damage or leakage, immediately notify a Public Health Authority and notifying the Director of the CDC is no longer allowed.**
- Proper Shipping Names
 - UN 2900 Infectious Substances, affecting animals
 - UN 2814 Infectious Substances, affecting humans
- Complete name **AND** address of the Shipper **AND** Consignee (Receiver)
- Name and telephone number of a responsible person. This must be a reliable and responsible person that will answer the phone (**NO** voicemail and **NO** answering machines). They should be able to answer any questions about the content, shipper, recipient details, and/or permit inquiries.
- Orientation Marks or the words “**THIS SIDE UP**” on packages containing liquids. Two orientation marks or the words “**THIS SIDE UP**” should be on two opposite sides of the box. However, they must match. Both sides must be orientation marks or both sides must be marked “**THIS SIDE UP**”.
- The word “**OVERPACK**” should also be on the box if an overpack is being used.



Documentation

Shipper's Declaration

A Shipper's Declaration for Dangerous Goods is a legal document and is required for each shipment of Infectious Substances, Category A. It is also one of the main reasons packages get rejected – because they are incorrectly prepared.

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To keep your Shipper's Declaration from being rejected, here are some things that you must do:

1. Prepare three copies – one for the shipper and two for the carrier. However, some carriers may require more. Check with your courier before submitting.
2. Keep your copies for two years – in case there are questions later.
3. If you have made prior arrangements with the courier, submit your Shipper's Declaration information electronically.
4. Fill out each line or space correctly.

Permits

Additional documentation (i.e., permits or certificates) may be required when shipping Infectious Substances, Category A. When shipping internationally, the shipper is responsible for obtaining an export permit. The receiver is responsible for obtaining all permits, including USDA permits for interstate travel, or those required for any countries through which the package will travel.

Permits or Certificates Required	Shipper's Responsibility	Receiver's Responsibility
USDA permits required for certain human or animal pathogens. Per regulations by the USDA, or the CDC	When shipping internationally, the shipper is responsible for obtaining the import and/or export permit.	The receiver is responsible for obtaining all permits necessary for any countries through which the package will travel.

Example

To be precise, UN2900 Infectious Substances, Category A, affecting animals and UN 2814 Infectious Substances, Category A, affecting humans must be triple packaged.

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You should pack using the ICAO/IATA Packing Instructions:

- 954 for shipments that also require Dry Ice
- 620 for Infectious Substance, Category A

Follow the instructions with your vendor approved packaging system.

1. Start with leak-proof primary container. (This typically is the vial containing your sample).
2. Wrap the primary container in absorbent material. The absorbent material should be sufficient to absorb all the material in the primary container (s).
3. Some vendors provide plastic sealable bags as an added measure of protection. If this is included in your packaging system, follow the vendor's instructions.
4. Place the primary container with absorbent material (plastic bag, if included) into the vendor-provided primary container. This primary container is leak-proof and passes designated pressure and drop testing.
5. Place the secondary container into a tertiary (or third) container. The tertiary container must be tested and approved by the manufacturer. This is typically a fiberboard box. If Dry Ice is required you must also follow Packing Instruction 954 including the use of a Styrofoam box within the outer fiberboard box.
6. Place the required list of contents between the secondary and tertiary containers. The required list of contents must be:
 - a. The technical name of the substances
 - b. The volume
 - c. The number of items



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Operator (or Carrier) Responsibilities

Not all couriers/carriers will transport all Infectious Substances, Category A, **AND** not all countries or states in the U.S. accept Infectious Substances, Category A.

Where there are variations (restrictions) by state/country or courier/carrier, they may be more restrictive than the IATA DGR or ICAO TI, but never less restrictive. **An example of this would be Federal Express's forms.** When shipping FedEx, **ONLY** typed or computer-generated forms are allowed. Packages with handwritten forms **will not be accepted**.

Commercial Courier

The airline industry is very strict about transporting infectious materials. You **CANNOT** carry these materials/samples onto a passenger plane no matter how it is packaged. You **MUST** use commercial couriers such as UPS, USPS, FedEx, or DHL. There are quantity limitations, depending on the samples being shipped, and on the courier's method of transport. For more information, please check with OH&S and/or your courier.

Quantity Limits

If the package contains less than 50 milliliters or 50 grams per package, then it can be shipped in the cargo hold of a passenger airplane. Packages exceeding 50 milliliters or 50 grams must be shipped by cargo aircraft only and have the black on orange **Cargo Aircraft Only** sticker affixed by the shipper. Packages exceeding 4 liters or 4 kilograms must be shipped by ground transportation or divided to remain under the limit.

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Security



SECURITY of the package is the shipper's responsibility until it is handed off to the authorized carrier!

After preparing the package for shipment, the package must remain under the direct control of trained personnel until it is handed over to the carrier. This reduces the chances of tampering, theft, destruction, or invalidating the shipper's signature that signifies the package has been prepared in accordance with 49 CFR/IATA regulations.



If you suspect a package has been tampered with, notify UAB OH&S **IMMEDIATELY!**

Before handing the package over to the carrier for shipment, it is the shipper's responsibility to ensure that all Federal and International regulations are met. International shipments may require additional permits. Use the checklist to fulfill courier/carrier variations.

Receiver (or Consignee) Responsibilities

If you are expecting to receive packages containing Infectious Substances, Category A at UAB, you have the responsibility to:

- Inspect the documents
- Inspect the package
- Get an import permit if necessary
- Report any damages to the shipper, UAB Biosafety, and the Center for Disease Control (CDC)

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- Notify the sender that the package has arrived
- Keep all shipping documents for a minimum of two years

Conclusion

This concludes the **Shipping Infectious Substances, Category A (OHS_BIO202)** training course. You should now take the assessment. 85% or higher is considered passing. You have three chances to successfully complete the assessment. Failing all three attempts means that you fail the course and must start over.

Want to Learn More?

OH&S has many training courses available to all UAB active employees and students. This includes topics such as in depth radiation training, biosafety, bloodborne pathogens, chemical safety, Controlled Substances, building life safety, hazardous and medical waste, universal waste, PPE, Hazard Communication, etc.

We have a [decision tree](#) to assist you in choosing the right course to match the knowledge/skills you may need at work every day as well.

If you have any questions or comments, please feel free to contact OH&S at 205-934-2487.