

University of Pittsburgh Safety Manual	EH&S Guideline Number: 03-004	
Subject: SHIPPING	Effective Date 3/1/08	Page 1 of 6

SHIPPING

The International Air Transport Association (IATA) and US Department of Transportation (DOT) have regulations regarding shipments containing Dangerous Goods, which are defined as articles or substances capable of posing a risk to health, safety, property, or the environment and are shown in the list of dangerous goods in the IATA and DOT Regulations. These guidelines provide information to University faculty, staff, and students wishing to ship or transport Dangerous Goods.

Initial and recurrent training is required for anyone wishing to transport chemical or biological substances, dry ice, genetically modified micro-organisms, or infectious substances. Environmental Health & Safety (EH&S) provides training to fulfill this requirement.

1. Definitions

- 1.1 **Dangerous Goods:** Articles or substances capable of posing a risk to health, safety, property, or the environment and are shown in the list of dangerous goods in the IATA and DOT Regulations.
- 1.2 **Infectious Substance, Category A:** An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals. Indicative examples of substances that meet these criteria are given in Table 3.6.D of the IATA Regulations.
- 1.3 **Biological Substance, Category B:** An infectious substance which does not meet the criteria for inclusion in Category A. Infectious substances in Category B must be assigned UN 3373.
- 1.4 **Genetically Modified Organisms (GMO) or Micro-organisms (GMMO):** Organisms in which genetic material has been purposely altered in a way that does not occur naturally. GMO/GMMOs are capable of altering animals, plants or microbiological substances in a way which is not normally the result of natural reproduction.
- 1.5 **Biological Products:** Products derived from living organisms which are manufactured and distributed in accordance with the requirements of appropriate national authorities, which may have special licensing requirements, and are used either for prevention, treatment, or diagnosis of disease in humans or animals, or for development, experimental or investigational purposes related thereto. They include, but are not limited to, finished or unfinished products such as vaccines.
- 1.6 **Triple Packaging:** Combination packaging consisting of a (1) leakproof primary

University of Pittsburgh Safety Manual	EH&S Guideline Number: 03-004	
Subject: SHIPPING	Effective Date 3/1/08	Page 2 of 6

receptacle, with adequate absorbent (2) leakproof secondary packaging, (3) a rigid outer container.

- 1.7 **Packing Instruction:** A set of specific packaging requirements which must be used for each article or substance offered for shipment by air.
- 1.8 **Shipper's Declaration:** A form which must be completed in conjunction with shipments containing dangerous goods.
- 1.9 **Airway Bill:** A form which accompanies shipments of dry ice and Biological Substance, Category B.
- 1.10 **UN/ID Number:** A unique four digit number assigned to each Dangerous Good under the United Nations' classification system.

2. Training Requirements

Federal regulations require that anyone shipping Dangerous Goods be trained and certified. All, University personnel preparing, labeling, marking, or documenting shipments of Dangerous Goods must comply with the Regulations and the training requirements. EH&S has developed a training program for University personnel to assist in the shipment of Dangerous Goods. The training satisfies the IATA training requirement, and it offers specific information on proper classification, packaging, marking, labeling, and documentation of shipments containing Dangerous Goods. Training is required initially and must be repeated every two years.

3. Types of Shipments

The shipper is responsible for the proper classification and identification of the material being shipped. If you are not sure how to properly classify or identify a material for shipment, contact EH&S at 412-624-9505. Most shipments from the University fall into one of the following categories:

3.1 **Biological Substance, Category B** (examples: blood specimens, tissues, urine)

Materials fitting this classification must be shipped as "Biological Substance, Category B" and assigned to UN 3373. Substances which are fixed or have been treated to neutralize pathogens are not subject to these regulations.

Packaging

All Biological Substance Category B material must be triple packed in compliance with IATA Packing Instruction 650. The maximum quantity for the primary receptacle is 1 L. The outer packaging must not contain more than 4 L or 4 kg.

Labeling

University of Pittsburgh Safety Manual	EH&S Guideline Number: 03-004	
Subject: SHIPPING	Effective Date 3/1/08	Page 3 of 6

The outer package must display the following:

- The text “Biological Substance Category B”
- The UN 3373 diamond-shaped mark
- The name and address of the shipper and receiver
- A Class 9 Miscellaneous label if shipping on Dry Ice
- Net weight of Dry Ice (if used)

Documentation

A Shipper’s Declaration is not required, but an airway bill must be used. The airway bill must indicate “Biological Substance Category B” and a name and telephone number for the person responsible for the shipment.

3.2 Infectious Substance, Category A

(examples: herpes B virus cultures, HIV cultures, Ebola virus)

Packaging

All Infectious Substances, Category A must be triple packed in compliance with IATA Packing Instruction 602. The maximum quantity that may be shipped on passenger aircraft is 50 mL or 50 g. The maximum quantity for cargo aircraft is 4 L or 4 kg.

Labeling

The outer package must display the following:

- The proper shipping name & UN number (Infectious Substance affecting humans, UN2814 or Infectious Substance, affecting animals, UN 2900)
- A 6.2 Infectious Substance label
- The name and address of the shipper and receiver
- Name and phone number of person responsible for shipment
- A Class 9 Miscellaneous label if shipping on Dry Ice
- Net weight of Dry Ice (if used)

Documentation

A Shipper’s Declaration must be completed when shipping an Infectious Substance, Category A. The individual that signs the declaration must be trained and certified, and shall be responsible for the shipment.

3.3 Genetically Modified Organisms (GMO) or Micro-organisms (GMMO)

Genetically modified organisms must be classified as a Class 9 Miscellaneous material and assigned to UN 3245. If the GMO/GMMO meets the definition of a Category A Infectious Substance, it must be packaged and shipped as Category A.

Packaging

University of Pittsburgh Safety Manual	EH&S Guideline Number: 03-004	
Subject: SHIPPING	Effective Date 3/1/08	Page 4 of 6

GMO/GMMOs are packed in the same way as Category A Infectious Substances, but there are no specific testing requirements for the package. Follow Packing Instruction 913. The maximum quantity per primary receptacle is 100 mL or 100 g.

Labeling

The outer package must display the following:

- The proper shipping name & UN number (Genetically Modified Micro-organism, UN3245)
- A Class 9 Miscellaneous label
- Name and address of the shipper and receiver
- Net weight of Dry Ice (if used)

Documentation

A complete Shipper's Declaration must be completed when shipping a GMO/GMMO. The individual that signs the declaration must be trained and certified and is responsible for the shipment.

3.4 Biological Products

Biological Products are divided into the following groups:

- 3.4.1 Biological products which are manufactured and packaged in accordance with the requirements of appropriate national authorities and transported for the purposes of final packaging or distribution and use for personal health care by medical professionals or individuals are not subject to these Regulations.
- 3.4.2 Substances which do not meet the definition above and are reasonably believed to contain infectious substances must be classified as Category A Infectious Substances, Category B Infectious Substances, or Diagnostic Specimens.
- 3.4.3 All Biological Products must be triple packed, and the labeling and documentation must comply with the respective Dangerous Good category described above.

3.5 Dry Ice

Dry ice is considered a Class 9 Miscellaneous Dangerous Good.

Packaging

University of Pittsburgh Safety Manual	EH&S Guideline Number: 03-004	
Subject: SHIPPING	Effective Date 3/1/08	Page 5 of 6

Dry ice must be packed in compliance with IATA Packing Instruction 904 and packed in a manner that allows for the release of carbon dioxide gas.

Labeling

The outer package must display the following:

- The proper shipping name & UN number (Dry Ice, UN1845)
- A Class 9 Miscellaneous label (Class 9 not required for UPS)
- Net weight of Dry Ice (UPS requires < 5 lbs)
- Name of the material being refrigerated (i.e. – diagnostic specimen, clinical sample)
- Name and address of the shipper and receiver

Documentation

A Shipper’s Declaration is not required (unless shipping an Infectious Substance or Genetically Modified Organism). The airway bill must indicate “Dry Ice, UN1845.”

3.6 Exemptions

Exempt human/animal specimens

Human or animal specimens for which there is minimal likelihood that pathogens are present are not subject to the Regulations if the specimen is transported in a package which will prevent any leakage and is marked with the words “**Exempt human specimen**” or “**Exempt animal specimen,**” as appropriate.

The packaging must consist of triple packaging.

In determining whether a patient specimen has a minimal likelihood that pathogens are present, an element of professional judgment is required to determine if a substance is exempt. The judgment should be based on the known medical history, symptoms, and the individual circumstances of the source and prevalent local conditions. If there is any reason to suspect that the specimen contains a pathogen, it must be classified accordingly and it can not be shipped as an exempt specimen.

4. Triple Packaging

Biological Substance, Category B, Infectious Substances, Category A and Genetically Modified Organisms must be triple packed accordingly to IATA.

- 4.1 The primary container holds the material that is being shipped. It must be leak proof.
- 4.2 The secondary container holds the primary container(s). It must also be leak-proof and meet specific pressure test standards when shipping liquids. Absorbent material must be placed between the primary and secondary containers.

University of Pittsburgh Safety Manual	EH&S Guideline Number: 03-004	
Subject: SHIPPING	Effective Date 3/1/08	Page 6 of 6

- 4.3 The outer package must be rigid and UN-certified when required by the applicable Packing Instruction. If a UN-certified container is not required, the outer package must be of good quality and strong enough to withstand handling encountered during transport.

5. Shipper's Declaration

The Shipper's Declaration must:

- be typewritten or computer generated in English.
- be printed in black and have red hatchings in the left and right margins.
- include three copies of the form (two for the carrier and one copy for your records which must be retained for 375 days).
- be signed and dated by an individual that has completed the required training.

6. CDC Select Agents

The U.S. Department of Health and Human Services Centers for Disease Control and Prevention (CDC) and the US Department of Agriculture (USDA) have collaborated to develop a list of biological agents, toxins, and high consequence livestock pathogens that have the potential to pose a severe threat to public health. Specific shipping regulations and restrictions apply to these agents. **You must contact EH&S if you plan on shipping or receiving any select agent.**

7. Importing to the United States

The Bureau of Customs and Border Protection processes all shipments entering the United States. An Import Permit may be required to deliver packages entering the United States. Contact the Bureau before shipping the material.

8. Exporting from the United States

Depending on the details of the shipment, an export permit may be required when shipments are being sent to another country. EH&S recommends contacting the Bureau of Customs and Border Protection prior to sending shipments outside the United States.

9. Importing or Transporting Controlled Material/Organisms/Vectors

The United States Department of Agriculture (USDA) regulates the intrastate transportation and importation of animals and animal-derived materials. Generally, a USDA veterinary permit is need for materials derived from animals or exposed to animal sources. Materials which require a permit include animal tissues, blood, and cells of livestock or poultry origin.