1.0 Introduction

As part of the Weill Cornell Medicine (WCM) Environmental Health and Safety (EHS) Program Manual, this Biological Material and Dry Ice Shipments Manual has been developed. Certain biological materials, as well as dry ice and preservatives, are regulated as dangerous goods when shipped. The handling and shipping of dangerous goods are regulated by federal and international agencies, including:

- International Air Transport Association (IATA)
- U.S. Department of Transportation (USDOT)
- Federal Aviation Administration (FAA)
- United States Postal Service (USPS)
- Centers for Disease Control and Prevention (CDC)
- Occupational Health and Safety Administration (OSHA)
- U.S. Department of Health and Human Services (USDHHS)
- U.S. Department of Agriculture (USDA)
- U.S. Department of Commerce (USDOC)
- U.S. Department of Fish and Wildlife (USFWS)

Compliance with this Manual is essential to ensuring that biological materials and dry ice shipments are shipped in accordance with the stringent regulations established by these agencies. Penalties for non-compliance with these regulations are significant and could result in the following fines:

- Up to $250,000 and up to five years imprisonment for the individual shipper.
- Up to $500,000 per incident for the organization.
- Up to 10 years imprisonment for willful violation resulting in the release of a hazardous material (dangerous good) that results in death or bodily injury.

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3.0 Objective

The objective of this Manual is to provide WCM employees guidance in the proper shipping of biological materials and dry ice shipments by air in accordance with federal and international regulations as well as WCM procedures. The shipment process includes:

- Obtaining approval from the Office of Sponsored Research Administration (OSRA) by utilizing a Material Transfer Agreement form available from ORSA.
- Obtaining import, export, and/or interstate permits, if applicable.
- Training all persons shipping dangerous goods. Initial and recurrent training are required.
- Classifying the biological material.
- Determining the appropriate packing instructions and guidelines.
- Selecting the appropriate packing materials.
- Packing, marking, and labeling the package(s) properly.
- Completing, signing and retaining all shipping documentation.
- Securing the packages prior to shipment.

3.1 DANGEROUS GOODS ASSESSMENT FORM

An example of the Dangerous Goods Assessment Form is available for shippers who require assistance with their shipments. If assistance is required, submit a Dangerous Goods Assessment Form to EHS.
4.0 Applicability

4.1 WHO DOES THIS MANUAL APPLY TO?

4.1.1 Shippers

The requirements of this Manual apply to all WCM faculty, staff, employees, or students who perform any of the activities in steps 4 through 9 of the shipment process identified in Section 3.0 – Objective. People performing any of these activities will hereby be identified as “shippers.”

4.1.2 Carry-on and Checked Baggage Restrictions

IATA regulations govern the transport of dangerous goods on passenger and cargo aircraft. The IATA regulations state that no person shall carry dangerous goods or cause dangerous goods to be carried aboard an aircraft in either checked or carry-on baggage or on their person unless specifically permitted by IATA (Appendix A) and the airline.

4.2 WHAT DOES THIS MANUAL APPLY TO?

This Manual focuses on the IATA Air Transportation Requirements for biological materials and preservatives as identified herein. The IATA Air Transport Regulations are more restrictive for these substances and compliance with IATA’s packing instructions will ensure compliance with the ground transportation requirements established by the USDOT. If the shipper intends to ship any other biological, chemical, or radiological substance not specifically identified in this procedure, then the shipper must contact EHS for further instructions and training.

4.3 HOW LONG DO THE REQUIREMENTS OF THIS MANUAL APPLY?

The shipping guidelines and requirements of this procedure are primarily derived from the 2016 IATA Dangerous Goods Regulations (57th Edition). These regulations are revised on an annual basis; therefore, procedure will be revised by EHS annually.

Shippers must ensure that they possess and are compliant with the most current version of this procedure prior to conducting any shipments.

5.0 Significant Changes for 2016

IATA modifies and updates its regulations on an annual basis. This document reflects the most current regulatory shipping requirements. There are no significant changes between 2015 and 2016.

6.0 Import, Export, and Interstate Transport Permits

Importing (IM), exporting (EX), and interstate (IS) shipments of biological materials may require additional documentation and/or permitting for agencies such as:

- US Department of Commerce - Bureau of Industry and Security (EX)
- CDC Etiological Agent Import and Transport Permits (IM and IS)
- USDA - APHIS Plant Protection Quarantine (IM)
- USDA - APHIS CITES Permits (IM and EX)
- USDA - APHIS Veterinary Services Permits (IM, EX, and IS)
- US Fish and Wildlife Permits (IM and EX)

These permits and documents must be obtained prior to shipping or receiving the biological materials. These permits and documents may take several weeks to obtain. Contact EHS to determine if your shipment requires any permitting.

6.1 FOREIGN NATIONALS

Shipments to or from foreign nationals within the United States are still regulated as importing and exporting.
7.0 Biological Material Classifications

This section focuses on the classification of biological materials. Shippers must also determine if other dangerous goods (e.g., regulated preservatives and/or dry ice) are included in the shipment. The Shipper’s knowledge of the biological material and its intended use will help determine if the material is classified as one of the following:

- Non-Regulated Biological Materials
- Select Agents and Toxins
- Infectious Substance, Category A
- Biological Substance, Category B
- Patient Specimens
- Genetically Modified Micro-Organisms and Organisms
- Biological Products
- DNA Sequencing Samples to Cornell-Ithaca
- Campus-to-Campus (C2C) Bus Service

Review the following descriptions of biological materials to determine which description most accurately applies. A flow chart (Appendix B) is available to facilitate this process.

7.1 NON-REGULATED BIOLOGICAL MATERIALS

The following are biological materials which are exempt from the dangerous goods shipping requirements unless mixed, preserved, and/or otherwise shipped with a material which is still classified as a dangerous good.

- Substances that do not contain infectious substances or substances that are unlikely to cause disease in humans or animals.
- Substances containing micro-organisms (not including genetically modified micro-organisms), which are non-pathogenic to humans or animals.
- Substances in a form that any present pathogens have been neutralized or inactivated such that they no longer pose a health risk.
- Environmental samples (including food and water samples), which are not considered to pose a significant risk of infection.
- Dried blood spots, collected by applying a drop of blood onto absorbent material, or fecal occult blood screening tests.
- Blood or blood components that have been collected for the purposes of transfusion or for the preparation of blood products to be used for transfusion or transplantation.
- Any tissues or organs intended for the use in transplantation.

*If this classification most accurately describes the biological material, refer to Section 9.0 – General Biological Material Packaging Requirements.*

7.2 SELECT AGENTS AND TOXINS

Only the WCM Responsible Official is authorized to acquire and transfer select agents and toxins. A list of select agents and toxins is provided in Appendix C.

*If the biological material is a select agent or toxin, contact the WCM Responsible Official via EHS for the shipment of this substance.*

7.3 INFECTIOUS SUBSTANCE, CATEGORY A

Biological materials are classified as Infectious Substance – Category A if it is an infectious substance which is being transported in a form that, when exposure to it occurs, it is capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals. Pathogens are defined as microorganisms (including bacteria, viruses, rickettsia, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

Indicative examples of substances that meet these criteria are provided in Appendix D. The table listed in Appendix D is not exhaustive. Infectious substances, including new or emerging pathogens, which do not appear in Appendix D but meet the same criteria must be classified as Category A. In addition, if there is doubt as to whether or not a substance meets the criteria, it must be included in Category A.

*If this classification most accurately describes the biological material, refer to Section 10.0 – Infectious Substance, Category A Shipper Requirements.*
7.3.1 Live Infected Animals
Live infected animals must not be transported by air. Contact EHS if live infected animals need to be shipped.

7.4 BIOLOGICAL SUBSTANCE, CATEGORY B
Infectious substances which do not meet the criteria for inclusion in Category A are classified as Biological Substance, Category B. Examples of infectious substances meeting the criteria for Biological Substance, Category B include:

- Human blood, tissue, or other potentially infectious materials infected with Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), or other blood borne pathogens not otherwise considered an Infectious Substance, Category A pathogen.
- Human blood, tissue, or other potentially infectious materials which are being shipped for infectious disease screening. This includes specimens not known to be infectious but are still be shipped for infectious disease screening.

*If this classification most accurately describes the biological material, refer to Section 11.0 – Biological Substance, Category B Shipper Requirements.*

7.5 PATIENT SPECIMENS
Patient specimens are those collected directly from humans or animals, including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluid swabs, and body parts being transported for purposes such as research, diagnosis, investigational activities, disease treatment and prevention.

7.5.1 Patient Specimens with Category A or B Pathogens
Patient specimens containing or reasonably expected to contain Category A or Category B pathogens must be classified as either an Infectious Substance, Category A, or a Biological Substance, Category B, depending on the classification of the pathogen.

7.5.2 Patient Specimens being sent for Infectious Disease Screening
Patient specimens that are being sent to screen for the presence of infectious diseases must be classified as Biological Substance, Category B.

7.5.3 Patient Specimens with Minimal Likelihood of Containing Pathogens
An element of professional judgment is required to determine if a patient specimen has the minimal likelihood of a pathogen being present. That judgment should be based on the known medical history, symptoms and individual circumstances of the source, human or animal, and endemic local conditions.

Examples of specimens which may be transported under this classification include blood or urine tests to monitor cholesterol levels, blood glucose levels, hormone levels, or prostate specific antigens (PSA); tests required to monitor organ function such as heart, liver or kidney function for humans or animals with non-infectious diseases, or therapeutic drug monitoring; tests conducted for insurance or employment purposes and are intended to determine the presence of drugs or alcohol; pregnancy tests; biopsies to detect cancer; and antibody detection in humans or animals.

*If this classification most accurately describes the biological material, refer to Section 12.0 – Patient Specimen Shipper Requirements.*

7.5.4 Patient Specimens Transported in Dedicated Vehicles
USDOT regulations do not apply to private or contract motor carriers used exclusively to transport patient (diagnostic) specimens or biological products. Medical or clinical equipment and laboratory products may be transported aboard the same vehicle provided they are properly packaged and secured against exposure or contamination. Note that in order for the vehicle to be “dedicated,” the vehicle cannot be utilized for other purposes at the same time (e.g., patient transport).

*If this classification most accurately describes the biological material and transportation process, then no specific packing instructions are required by law. Prepare the shipment in accordance with Section 9.0 – General Biological Material Packaging Requirements and the carrier’s specifications, if applicable.*
7.6 GENETICALLY MODIFIED MICROORGANISMS AND ORGANISMS

Genetically modified microorganisms (GMMO) and organisms (GMO) are micro-organisms and organisms in which genetic material has been purposely altered through genetic engineering in a way that does not occur naturally. GMMOs and GMOs are divided into the following categories:

7.6.1 Infectious GMMO and GMO

GMMOs and GMOs that are infectious must be classified as either Infectious Substance, Category A, or Biological Substance, Category B, depending on the classification of the pathogen.

7.6.2 Non-Infectious GMMO and GMO

This classification refers to all GMMOs and GMOs which are not infectious. Examples of non-infectious genetically modified organisms include adenoviral and lentiviral vectors which have been rendered incapable of replication.

If this classification most accurately describes the biological material, refer to Section 13.0 – Genetically Modified Microorganism Shipper Requirements.

7.7 BIOLOGICAL PRODUCTS

Biological products are those 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.

Biological products are divided into the following categories:

7.7.1 Government-Approved Biological Products

Biological products that are manufactured and packaged in accordance with national governmental health authorities’ approval (e.g., USDA or HHS – Food and Drug Administration) and transported for the purposes of final packaging or distribution, and used for personal health care by medical professionals or individuals are not regulated by IATA.

If this classification most accurately describes the biological material, then the material must be packaged in accordance with the approval. If the biological product is shipped with another dangerous good not associated with the approval (e.g., dry ice), then the requirements for the other dangerous goods would still apply. Furthermore, shippers must confirm if the carrier has more stringent restrictions which must be met.

7.7.2 Non-Approved Biological Products with Category A or B Pathogens

Biological products not approved by a national governmental health authorities’ approval (e.g., USDA or HHS – Food and Drug Administration) containing Category A or Category B pathogens must be classified as Infectious Substance, Category A or Biological Substance, Category B depending on the pathogen.

7.7.3 Biological Products Transported in Dedicated Vehicles

USDOT regulations do not apply to private or contract motor carriers used exclusively to transport diagnostic specimens or biological products. Medical or clinical equipment and laboratory products may be transported aboard the same vehicle provided they are properly packaged and secured against exposure or contamination. Note that in order for the vehicle to be “dedicated,” the vehicle cannot be utilized for other purposes at the same time (e.g., patient transport).

If this classification most accurately describes the biological material and transport process, then no specific packing instructions are required by law. Prepare the shipment in accordance with Section 9.0 – General Biological Material Packaging Requirements and the carrier’s specifications, if applicable.
7.8 DNA SEQUENCING SAMPLES SENT TO CORNELL – ITHACA
This classification refers to DNA sequencing samples being shipped to the DNA Sequencing Facility at the BioResource Center of Cornell University, Ithaca, NY.

*If this classification most accurately describes the biological material, refer to Section 14.0 – DNA Sequencing Sample Shipments to Cornell-Ithaca.*

7.9 CAMPUS-TO-CAMPUS (C2C) BUS SERVICE
This service applies to biological materials that are not regulated as hazardous materials by the U.S. Department of Transportation (DOT) and are allowed to be transported via the Campus-To Campus Bus Service between WCM in New York City and Cornell University’s Ithaca campus. A list of these materials is provided in the Campus-To-Campus (C2C) Bus Service Package Form.

*If this classification most accurately describes the biological material, refer to Section 15.0 – Campus-2-Campus (C2C) Bus Service.*

8.0 Chemical Classifications
This Biological Material and Dry Ice Shipments procedure and associated training program excludes most dangerous goods chemicals. Only dry ice, dangerous goods chemical preservatives shipped with infectious substances, and non-hazardous chemical preservatives may be shipped when conducted in accordance with this section. Contact EHS to review shipments of any chemicals not specifically approved in this section.

8.1 DRY ICE
Dry ice is often used when shipping samples which must remain at low temperatures. Dry ice is regulated as a dangerous good when shipped because of its off-gassing properties. Specifically, dry ice is solidified carbon dioxide and undergoes sublimation (changes from solid to gas) at normal atmospheric conditions. The off-gassing of carbon dioxide can lead to the displacement of oxygen resulting in asphyxiation. Additionally, if improperly packaged (i.e., not vented), the off-gassed carbon dioxide can pressurize a container, potentially resulting in the container exploding. As such, the use of dry ice in shipments is regulated by the United States Department of Transportation (USDOT), the Federal Aviation Administration (FAA), and the International Air Transport Association (IATA).

*If shipping with dry ice, refer to Section 16.0 – Dry Ice Shipper Requirements.*

8.2 CHEMICAL PRESERVATIVES WITH INFECTIOUS SUBSTANCES
IATA and USDOT allow 30 ml or less (per primary receptacle) of flammable liquids (Class 3), corrosive (Class 8), or miscellaneous dangerous goods (Class 9) as long as it is necessary for maintaining the viability, stabilizing, or preventing degradation or neutralizing the hazards of the Category A and Category B infectious substances. When shipped with Category A and Category B infectious substances, these chemical preservatives are exempt.

Common dangerous good chemical preservatives include:
- Ethanol solutions
- Formaldehyde (≥10% concentration of formaldehyde)
- Acetic Acid

8.2.1 Flammable Liquids (Class 3) Definition
Flammable Liquids (Class 3) are liquids or mixtures of liquids or liquids containing solids in solution or in suspension which give off a flammable vapor at temperatures of not more than 60°C (140°F) closed-cup test. Refer to the SDS or contact EHS to determine if the substance is a flammable liquid.

8.2.2 Corrosive (Class 8) Definition
Corrosive (Class 8) substances which by chemical action can cause severe damage when in contact with living tissue or, in the case of leakage will materially damage or even destroy, other goods or the means of transport. Refer to the SDS or contact EHS to determine if the substance is corrosive.
8.2.3 Miscellaneous Dangerous Goods (Class 9) Definition

Miscellaneous Dangerous Goods (Class 9) are articles and substances, which during air transport, present a danger not covered by other classes. Refer to the SDS or contact EHS to determine if the substance is a miscellaneous dangerous good.

8.3 CHEMICAL PRESERVATIVES WITH NON-INFECTIOUS BIOLOGICAL MATERIALS

If chemical preservatives are shipped with any non-infectious biological materials (not Category A or Category B infectious substances), chemical preservatives classified as flammable liquids (Class 3), corrosive (Class 8), or miscellaneous dangerous goods (Class 9) are no longer exempt. These shipments must be packaged and shipped in accordance with the requirements for the dangerous good chemical preservative requirements.

This manual and the Biological Material and Dry Ice Shipments training do not cover these types of shipments. Contact EHS for assistance with shipments of dangerous goods chemical preservatives with non-infectious biological materials.

8.4 COMMON NON-HAZARDOUS CHEMICAL PRESERVATIVES

Non-hazardous chemical preservatives used for maintaining the viability, stabilizing, or preventing degradation or neutralizing the biological material have no specific shipping restrictions when shipped in accordance with the biological material shipping requirements identified in this manual. Common non-hazardous chemical preservatives include:

- 10% Formalin (3.75% formaldehyde concentration)
- Formaldehyde (<10% concentration of formaldehyde)
- Phosphate buffered salines

8.5 LIQUID NITROGEN AND DRY SHIPPER REQUIREMENTS

Liquid nitrogen is regulated as a dangerous good when shipped. This manual and the Biological Material and Dry Ice Shipments training do not cover shipments with liquid nitrogen and liquid nitrogen dry shippers. Contact EHS for assistance with shipments of liquid nitrogen.

Additional information on preparing and shipping requirements is available in the EHS Update – Liquid Nitrogen Dry Shippers Preparation and Shipping Requirements.

8.6 CAMPUS-TO-CAMPUS (C2C) BUS SERVICE

This service applies to chemical materials that are not regulated as hazardous materials by the U.S. Department of Transportation (DOT) and are allowed to be transported via the Campus-To Campus Bus Service between WCM in New York City and Cornell University’s Ithaca campus. A list of these materials is provided in the Campus-To-Campus (C2C) Bus Service Package Form.

If this classification most accurately describes the biological material, refer to Section 15.0 – Campus-2-Campus (C2C) Bus Service.

9.0 General Biological Material Packaging Requirements

Shippers must ensure that biological materials are prepared and packaged as specified by its classification in Section 7.0. In general, a basic triple performance packaging strategy applies when shipping biological materials.
The following requirements represent the minimum packaging requirements for all biological materials. Additionally, packaging requirements may apply depending on the biological material classification and packaging requirements further identified in this Manual.

9.1 PRIMARY RECEPTACLES
Primary receptacles must be leak-proof for liquids and sift-proof for solids. “Biohazard” labels, if applicable to the material shipped, must be utilized.

9.2 SECONDARY PACKAGING
Primary receptacle(s) must be placed into secondary packaging in such a way that, under normal conditions of transport, they cannot break, be punctured, or leak. Secondary packaging must be leak-proof for liquids and sift-proof for solids.

9.2.1 Liquid Specimens
Absorbent material in sufficient quantity to absorb the entire contents must be placed between the primary receptacle(s) and the secondary packaging so that, during transport, any release or leak of a liquid substance will not reach the outer packaging and will not compromise the integrity of the cushioning material.

9.2.2 Fragile Primary Receptacles
If several fragile primary containers are placed into the same secondary packaging, they must be either individually wrapped or separated so as to prevent contact among them.

9.3 DURABLE AND RIGID OUTER PACKAGING
Secondary packaging must be secured in a durable and rigid outer packaging with suitable cushioning material. Outer packages must have one side with dimensions of not less than 100 mm x 100 mm when hazard class labels are required. A list of packaging suppliers is included in Appendix E.

9.4 DRY ICE PACKAGING REQUIREMENTS
When biological materials are shipped with dry ice, interior support must be provided to secure the secondary packaging(s) or packages in the original position after the dry ice has dissipated. The outer packaging or overpack must permit the release of carbon dioxide gas. The primary receptacle and the secondary packaging must maintain their integrity at the temperature of the refrigerant used.

9.5 ICE PACKAGING REQUIREMENTS
When biological materials are shipped with regular ice (not ice packs), interior support must be provided to secure the secondary packaging(s) or packages in the original position after the ice has melted. The outer packaging or overpack must be leak-proof. The primary receptacle and the secondary packaging must maintain their integrity at the temperature of the refrigerant used.
10.0 Infectious Substance, Category A Shipper Requirements

Infectious Substance, Category A biological materials must be shipped in compliance with IATA Packing Instruction 620. Shippers are compliant with the requirements of IATA Packing Instruction 620 when shipping in accordance with this Manual and utilizing appropriate performance tested packaging designed in accordance with Packing Instruction 620.

10.1 CONTAINER SIZE AND QUANTITY LIMITATIONS

10.1.1 Primary Receptacle Limit
There are no primary receptacle quantity limitations.

10.1.2 Outer Packaging Quantity Limit
The following outer packaging quantity limitations (totals per package) depend on the type of shipment:
- **Passenger and Cargo Aircraft Shipments** - Must not exceed 50 ml of liquid or 50 g of solid infectious material.
- **Cargo Aircraft Only Shipments** - Must not exceed 4 L of liquid or 4 kg of solid infectious material.
- **Special Provision “A81”** - The outer packaging limits do not apply to body parts, organs, or whole bodies known to contain or suspected of containing infectious substances. These materials must still be packed in accordance with this Section so as to present no hazard to persons or animals during transport. “A81” must be noted on the Shipper’s Declaration when this Special Provision is utilized.

10.2 PACKAGING REQUIREMENTS

Shippers must confirm that the packaging, including secondary packaging, has been tested and is suitable for shipping in accordance with IATA Packing Instruction 620 [e.g., stamped “UN 4G / Class 6.2” (“A” in illustration below)]. A list of packaging suppliers is provided in Appendix E.

Note: Special consideration for selecting appropriate packaging is required when samples are refrigerated or frozen (e.g., dry ice or pre-frozen packs).

10.2.1 General Packaging Requirements
Packaging must comply with Section 9.0 – General Biological Material Packaging Requirements in addition to the other requirements outlined in this section.

10.2.2 Closure Instructions
Shippers must follow the packaging manufacturer’s closure instructions. Record retention information for these instructions is available in Section 21.3 – Packaging Closure Instructions.

10.2.3 Packaging Reuse
Packaging reuse is not recommended. Before reuse, each packaging must be inspected and may not be reused unless free from incompatible residue, rupture, or other damage which reduces its structural integrity. All inappropriate dangerous goods markings and labels must be removed or completely obliterated. The closure instruction requirements described above must be satisfied.

10.2.4 Substances Shipped at Ambient Temperature or Higher
Primary receptacles must be of glass, metal or plastic. Positive means of ensuring a leak-proof seal must be provided, such as heat seal, skirted stopper or metal crimp seal. If screw caps are used, these must be secured by positive means (e.g., tape, paraffin sealing tape or manufactured locking closure).

10.2.5 Lyophilized Substances
Primary receptacles must be either flame-sealed ampoules or rubber-stoppered glass vials with metal seals.
10.2.6 95 kPa Pressure-Tested Primary or Secondary Packaging

The primary receptacle or the secondary packaging must be capable of withstanding, without leakage, an internal pressure producing a pressure differential of not less than 95 kPa (0.95 bar, 13.8 lb/in2) and temperatures in the range of -40°C to 55°C (-40°F to 130°F).

Shippers must ensure that the manufacturer of either the primary receptacle or the secondary packaging has tested the container to the 95kPa pressure standard. Replacement “95 kPa” bags are available from many packaging manufacturers and must be specifically labeled as “95 kPa”. Zip lock bags or unlabeled specimen transport bags are prohibited.

10.3 MARKINGS AND LABELS

- **Un-Packaging Specification** ("A" in Illustration Above): Confirm that the packaging has been tested and is suitable for shipping in accordance with IATA Packing Instruction 620 (e.g., stamped “UN 4G / Class 6.2”).

- **Ship “From” and “To” Information** ("B" in Illustration Above): The full name and address of the shipper (“From”) and consignee (“To”) must be clearly labeled or marked on the package. Shipper information should start with “Weill Cornell Medical College” followed by the shipper’s specific information, name, and address.

- **Responsible Person** ("C" in Illustration Above): The name and phone number of a person with first-hand knowledge of the materials being shipped and has received appropriate shipper training.

- **“Un” Number and Proper Shipping Name** ("D" in Illustration Above): The proper shipping name is either: “UN2814, Infectious Substance, Affecting Humans”, or “UN2900, Infectious Substance, Affecting Animals”.
  - If the pathogen affects humans only or humans and animals, then “Infectious Substance, Affecting Humans” must be used. If the pathogen is only capable of affecting animals, then “Infectious Substance, Affecting Animals” must be used. Abbreviations or variations in spelling are prohibited/violations.
  - **NOTE:** Special Provision “A140” - The technical name need not be shown on the package.

- **Net Quantity (If More Than One Package)** ("E" in Illustration Above): If more than one package is shipped, then the net quantity of biological material must be marked on the package under the proper shipping name.

- **Class 6.2 – Hazard Class Label** ("F" in Illustration Above):
6.2 Hazard Class label must be affixed to the side of the package.

Labels must be 4”x 4” in size. Use only pre-printed shipping labels. Do not print paper labels. Contact EHS if labels are needed.

Package must be large enough for the label to fit on one side.

As of October 1, 2014, shippers can no longer utilize Class 6.2 Hazard Class labels containing Center of Disease Control (CDC) information. Above is an image of the revised Class 6.2 Hazard Class label.

- **Cargo Aircraft Only Label** (*G* in Illustration Above): If the outer package limits from Section 10.1.2.2 were used for the shipment, then a Cargo Aircraft Only label must be affixed to the side of the package.

  The label must be 120mm x 110mm in size. For small packages of Category A, these dimensions may be halved.

  Use only pre-printed shipping labels. Do not print paper labels. Contact EHS if labels are needed.

- **Package Orientation Arrows (≥ 50 Ml Liquid)** (*H* in Illustration Above): Package orientation arrows must be affixed or pre-printed on opposite sides of the package when shipping 50 ml or more of Category A liquid materials.

### 10.4 SHIPPING DOCUMENTS

If the infectious substance being transported is unknown but suspected of meeting the criteria for inclusion in Category A the words “Suspected Category A Infectious Substance” must appear on the Itemized List of Contents and the Shipper’s Declaration in parenthesis after the proper shipping name.

#### 10.4.1 Itemized List of Contents / Commercial Invoice

An Itemized List of Contents must be enclosed between the secondary packaging and the outer packaging. An example commercial invoice may be utilized if an itemized list of contents is not available. The commercial invoice should be utilized for international shipments.

#### 10.4.2 Shipper’s Declaration for Dangerous Goods

A Shipper’s Declaration for Dangerous Goods is required. Refer to the Shipper’s Declaration for Dangerous Goods for further instructions on completing this document.

#### 10.4.3 Carrier’s Air Waybill (e.g., FedEx Airbill)

The following must be identified on the carrier’s air waybill. An example FedEx Airbill is provided below.
CONTINUED: Biological Materials and Dry Ice Shipments Manual

**11.0 Biological Substance, Category B Shipper Requirements**

Biological Substance, Category B must be shipped in compliance with IATA Packing Instruction 650. Shippers are compliant with the requirements of IATA Packing Instruction 650 when shipping in accordance with this Manual and utilizing appropriate performance tested packaging designed in accordance with Packing Instruction 650.

**11.1 CONTAINER SIZE AND QUANTITY LIMITATIONS**

**11.1.1 Primary Receptacle Quantity Limitations**

Must not exceed 1 L of liquid or 4 kg of solid biological material.

**11.1.2 Outer Packaging Quantity Limitations**

Must not exceed 4 L of liquid or 4 kg of solid biological material.

*Exception*: The packaging quantity limits do not apply to body parts, organs, or whole bodies. These materials must still be packed in accordance with Section 11.2 so as to present no hazard during transport.

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- **“To” / “From” Information** (*A* in illustration above): Complete “To” and “From” information.
- **Priority Shipping** (*B* in illustration above): The fastest shipping service must be selected (e.g., Priority Overnight).
- **Other Packaging** (*C* in illustration above): Select “Other” packaging. FedEx packaging cannot be used to ship these materials.
- **Dangerous Goods Designation** (*D* in illustration above): Select the “Yes As per attached Shipper’s Declaration” box.
- **Cargo Aircraft Only Designation** (*E* in illustration above): Select “Cargo Aircraft Only” if the Cargo Aircraft Only outer packing limits from Section 10.1.2.2 are utilized.
- **Number of Packages** (*F* in illustration above): Enter the number of packages shipped (typically “1”) and the total weight.
11.2 PACKAGING REQUIREMENTS
Shippers must confirm that the packaging has been tested and is suitable for shipping in accordance with IATA Packing Instruction 650. A list of packaging suppliers is provided in Appendix E.

Note: Special consideration for selecting appropriate packaging is required when samples are refrigerated or frozen (e.g., dry ice or pre-frozen packs).

11.2.1 General Packaging Requirements
Packaging must comply with Section 9.0 – General Biological Material Packaging Requirements in addition to the other requirements in this section.

11.2.2 Closure Instructions
Shippers must follow the packaging manufacturer’s closure instructions. Record retention information for these instructions is available in Section 21.3 – Packaging Closure Instructions.

11.2.3 Packaging Reuse
Packaging reuse is not recommended. Before reuse, each packaging must be inspected and may not be reused unless free from incompatible residue, rupture, or other damage which reduces its structural integrity. All inappropriate dangerous goods markings and labels must be removed or completely obliterated. The closure instructions requirements described above must be satisfied.

11.2.4 95 kPa Pressure-Tested Primary or Secondary Packaging
The primary receptacle or the secondary packaging must be capable of withstanding, without leakage, an internal pressure producing a pressure differential of not less than 95 kPa (0.95 bar, 13.8 lb/in2) and temperatures in the range of -40°C to 55°C (-40°F to 130°F).

Shippers must ensure that the manufacturer of either the primary receptacle or the secondary packaging has tested the container to the 95kPa pressure standard. Replacement “95 kPa” bags are available from many packaging manufacturers and must be specifically labeled as “95 kPa”. Zip lock bags or unlabeled specimen transport bags are prohibited.

11.3 MARKING AND LABELS

11.3.1 UN Packaging Specification
Since no UN Specification marking is required on the outside of the package, shippers must confirm that the packaging has been tested by the manufacturer and is suitable for shipping in accordance with IATA Packing Instruction 650.

- Ship “From” and “To” Information (“A” in illustration above): The full name and address of the shipper (“From”) and consignee (“To”) must be clearly labeled or marked on the package.
• **Responsible Person** ("B" in illustration above): The name and phone number of a person with first-hand knowledge of the materials being shipped and has received appropriate shipper training.

• **Proper Shipping Name** ("C" in illustration above): The proper shipping name “Biological Substance, Category B” in letters at least 6 mm high must be marked on the outer packaging adjacent to the diamond-shaped mark. Abbreviations or variations in spelling will result in a violation.

• “UN3373” – Hazard Class Label ("D" in illustration above):
  - “UN3373” Hazard Class label must be affixed to the side of the package
  - Labels must be 2”x 2” in size. Use only pre-printed shipping labels. Letters and numbers must be at least 6 mm tall and the line/diamond must be 2 mm thick.
  - Label must be orientated to appear in the shape of diamond as shown here.
  - Package must be large enough for the label to fit on one side.

• **Package Orientation Arrows** ("E" in illustration above): Package orientation arrows must be affixed on opposite sides of the package if 50 ml or more Category B biological liquids are shipped.

### 11.4 SHIPPING DOCUMENTS

**11.4.1 Itemized List of Contents / Commercial Invoice**
An Itemized List of Contents must be enclosed between the secondary packaging and the outer packaging. An example commercial invoice may be utilized if an itemized list of contents is not available. The commercial invoice should be utilized for international shipments.

**11.4.2 Shipper’s Declaration for Dangerous Goods**
A Shipper’s Declaration for Dangerous Goods is not required unless shipped with Category A Infectious Substances. If shipped with materials requiring a Shipper’s Declaration, the Biological Substance, Category B information must be included.

**11.4.3 Carrier’s Air Waybill (e.g., FedEx Airbill)**
The following must be identified on the carrier’s air waybill. An example FedEx Airbill is provided below.
“To” / “From” Information (“A” in illustration above): Complete “To” and “From” information.

Priority Shipping (“B” in illustration above): The fastest shipping service must be selected (e.g., Priority Overnight).

Other Packaging (“C” in illustration above): Select “Other” packaging. FedEx packaging cannot be used to ship these materials.

Dangerous Goods Designation (“D” in illustration above): Select the “Yes. Shipper’s Declaration not required” box.

UN3373 and Proper Shipping Name (“E” in illustration above): The “Nature and Quantity of Goods” box must show “UN3373, BIOLOGICAL SUBSTANCE, CATEGORY B,” and the number of packages being shipped. For FedEx USA Airbills, which do not have this box, the text may be written in any free area of the Airbill.

Number of Packages (“F” in illustration above): Enter the number of packages shipped (typically “1”) and the total weight.

12.0 Patient Specimen Shipper Requirements

Patient specimens for which there is minimal likelihood that pathogens are present must be packaged in accordance with this section. If the patient specimen contains or is reasonably expected to contain Category A or B pathogens, then it cannot be packaged in accordance with this section.

12.1 CONTAINER SIZE AND QUANTITY LIMITATIONS

There are no container size limitations for patient specimens.

12.2 PACKAGING REQUIREMENTS

Packaging must comply with Section 9.0—General Biological Material Packaging Requirements. FedEx prohibits the use of their standard FedEx boxes to ship exempt human or animal specimens.

Note: Special consideration for selecting appropriate packaging is required when samples are refrigerated or frozen (e.g., dry ice or pre-frozen packs).
12.2.1 Packaging Reuse
Packaging reuse is not recommended. Before reuse, each packaging must be inspected and may not be reused unless free from incompatible residue, rupture, or other damage which reduces its structural integrity. All inappropriate dangerous goods markings and labels must be removed or completely obliterated. A list of packaging suppliers is in Appendix E.

12.3 MARKINGS AND LABELS

- **Ship “From” and “To” Information (“A” in illustration above):** The full name and address of the shipper (“From”) and consignee (“To”) must be clearly labeled or marked on the package.
- **Proper Shipping Name (“B” in illustration above):** The package must be marked either “EXEMPT HUMAN SPECIMEN” or “EXEMPT ANIMAL SPECIMEN”, as appropriate. No variations in spelling are acceptable.

12.4 SHIPPING DOCUMENTS

12.4.1 Itemized List of Contents / Commercial Invoice and Shipper’s Declaration for Dangerous Goods
An Itemized List of Contents and Shipper’s Declaration are not required. A commercial invoice should be utilized for international shipments.

12.4.2 Carrier’s Air Waybill
The following must be identified on the carrier’s air waybill. An example FedEx Airbill is provided below.
13.0 Genetically Modified Micro-Organism Shipper Requirements

Genetically modified micro-organisms (GMMOs) and genetically modified organisms (GMOs) must be shipped in compliance with IATA Packing Instruction 959. Shippers are compliant with the requirements of IATA Packing Instruction 959 when shipping in accordance with this Manual and utilizing appropriate packaging. If the GMMO/GMO is infectious, then it cannot be packaged in accordance with this section.

13.1 CONTAINER SIZE AND QUANTITY LIMITATIONS

There are no container size limitations for GMMOs and GMOs.

13.2 PACKAGING REQUIREMENTS

Shippers must confirm that the packaging is suitable for shipping in accordance with IATA Packing Instruction 959. GMMO / GMO packaging must be of good quality, strong enough to withstand the shocks and loadings normally encountered during transport, including trans-shipment between transport units and between transport units and warehouses as well as any removal from a pallet or over-pack for subsequent manual or mechanical handling. Packaging must be constructed and closed so as to prevent any loss of contents that might be caused under normal conditions of transport, by vibration, or by changes in temperature, humidity or pressure.
Note: Special consideration for selecting appropriate packaging is required when samples are refrigerated or frozen (e.g., dry ice or pre-frozen packs).

A list of packaging suppliers is provided in Appendix E.

13.2.1 General Packaging Requirements

Packaging must comply with Section 9.0 – General Biological Material Packaging Requirements in addition to the other requirements outlined in this section.

13.2.2 Packaging Reuse

Packaging reuse is not recommended. Before reuse, each packaging must be inspected and may not be reused unless free from incompatible residue, rupture, or other damage which reduces its structural integrity. All inappropriate dangerous goods markings and labels must be removed or completely obliterated.

13.3 MARKINGS AND LABELS

- **Ship “From” and “To” Information (“A” in illustration above):** The full name and address of the shipper (“From”) and consignee (“To”) must be clearly labeled or marked on the package.
- **“UN3245” – Hazard Class Label (“B” in illustration above):**
  - UN3245 label must be affixed to the side of the package.
  - Labels must be 2”x 2” in size. Use only pre-printed shipping labels. Letters and numbers must be at least 6 mm tall and the line/diamond must be 2 mm thick.
  - Label must be orientated to appear in the shape of diamond as shown here.
  - Package must be large enough for the label to fit on one side.
13.4 SHIPPING DOCUMENTS

13.4.1 Itemized List of Contents / Commercial Invoice and Shipper’s Declaration for Dangerous Goods

An Itemized List of Contents and Shipper’s Declaration are not required unless shipped with Category A Infectious Substances. If shipped with materials requiring a Shipper’s Declaration, the GMMO information must be included.

A commercial invoice should be utilized for international shipments.

13.4.2 Carrier’s Air Waybill

The following must be identified on the carrier’s air waybill. An example of a FedEx Airbill is provided below.

- **“To” / “From” Information** (“A” in illustration above): Complete “To” and “From” information.
- **Priority Shipping** (“B” in illustration above): Priority Overnight shipping is not required.
- **Other Packaging** (“C” in illustration above): Select “Other” packaging. FedEx packaging cannot be used to ship these materials.
- **Dangerous Goods Designation** (“D” in illustration above): Select the “Yes. Shipper’s Declaration not required” box.
- **UN3245 and Proper Shipping Name** (“E” in illustration above): The “Nature and Quantity of Goods” box must show “UN3245, GMMO” or “UN3245, GMO” and the number of packages being shipped. For FedEx USA Airbills, which do not have this box, the text may be written in any free area of the Airbill.
- **Number of Packages** (“F” in illustration above): Enter the number of packages shipped (typically “1”) and the total weight.

14.0 DNA Sequencing Sample Shipments to Cornell-Ithaca

DNA sequencing samples must be appropriately packaged by the laboratory personnel prior to EHS shipping the samples. The DNA samples must be packaged as follows.
14.1 PACKAGING REQUIREMENTS

14.1.1 Primary Receptacles

DNA should be in water or Tris (not in TE) in a 500ul screw cap vial. Bacterial cell pellets should be in 15 ml round bottom tubes (e.g., Falcon 2059 tube) or a deep well block that holds >1ml.

14.1.2 Secondary Packaging

Place the samples in a properly labeled envelope and seal the envelope closed. The envelope should be unpadded and the appropriate size for the quantity and size of the samples being sent.

14.2 LABELING

Write your name, phone number, laboratory location, and order number on the envelope.

14.3 SHIPPING TO CORNELL-ITHACA

Laboratory personnel must drop off the DNA sequencing samples into the drop-box located in B-building basement corridor of 1300 York Avenue. EHS will prepare the shipments to the DNA Sequencing Facility at Cornell-Ithaca.

15.0 Campus-to-Campus (C2C) Bus Service

Permitted biological and chemical materials must be appropriately packaged, marked and labeled and meet package terms and conditions.

15.1 PACKAGING REQUIREMENTS, MARKING & LABELING, AND QUANTITY LIMITATIONS

WCM EHS must be contacted to assess if biological and/or chemical materials intended for transport are permitted on the C2C bus.

15.2 SHIPPING TO CORNELL-ITHACA

This service is restricted to Cornell business use, and must be scheduled in advance by phone. Please call Campus-2-Campus Bus Service at 607-254-8747 during regular business hours (7:30am- 4 pm, Monday- Friday) to make arrangements and receive information regarding terms and conditions.

16.0 Dry Ice Shipper Requirements

Dry ice must be shipped in compliance with IATA Packing Instruction 954. Shippers are compliant with the requirements of IATA Packing Instruction 954 when shipping in accordance with this Manual and utilizing appropriate packaging.

16.1 PACKAGE QUANTITY LIMITATIONS

Packaging must not contain more than 200 kg of dry ice.

16.2 PACKAGING REQUIREMENTS

16.2.1 Venting

Dry ice must utilize packaging designed and constructed to permit the release of carbon dioxide gas and prevent a build-up of pressure that could rupture the package. Do not place dry ice in air-tight canisters, bags or other containers.

16.2.2 Package Integrity

The package must be free from damage and of adequate strength for intended use. It must be strong enough to withstand the loading and unloading normally encountered in transport. It must also be constructed and closed in order to prevent any loss of contents that might be caused by vibration or by changes in temperature, humidity, or altitude.
Examples include commercially available packaging systems consisting of a Styrofoam container within a durable and rigid cardboard box.

### 16.2.3 Package Materials

Do not use plastics that can be rendered brittle or permeable by the temperature of dry ice. This problem can be avoided by using commercially available packages intended to contain dry ice.

### 16.2.4 Packaging Vendors

A list of packaging vendors is provided in Appendix E. FedEx boxes are not acceptable for shipping dry ice.

### 16.3 MARKINGS AND LABELS

- **Ship “From” and “To” Information (“A” in illustration above):** The full name and address of the shipper (“From”) and consignee (“To”) must be clearly labeled or marked on the package.
- **“UN1845” and Proper Shipping Name (“B” in illustration above):** One of the following proper shipping names and UN1845 identification number for dry ice must be marked on the package. No spelling variations are acceptable.
  
  - “UN1845, Dry Ice”, or
  
  - “UN1845, Carbon Dioxide, Solid”.
- **Net Weight of Dry Ice (“C” in illustration above):** The net weight of dry ice placed in the package must be marked on the package adjacent to the proper shipping name and UN number. The net weight must be in kilograms.
- **Class 9 – Hazard Class Label (“D” in illustration above):**
  
  - Class 9 hazard class label must be affixed to the side of the package.
  
  - Labels must be at least 4”x 4” in size. Use only pre-printed shipping labels.
  
  - Package must be large enough for the label to fit on one side.

As of **October 1, 2014**, shippers can no longer utilize Class 9 Hazard Class labels containing a horizontal line through the midpoint. Above is an image of the revised Class 9 Hazard class label.
16.4 SHIPPING DOCUMENTATION

16.4.1 Itemized List of Contents / Commercial Invoice and Shipper’s Declaration for Dangerous Goods
An Itemized List of Contents and Shipper’s Declaration are not required. If a Shipper’s Declaration is required for another dangerous good (e.g., Category A infectious substance), then the information pertaining to dry ice must be included.

A commercial invoice should be utilized for international shipments.

16.4.2 Carrier’s Air Waybill
The following must be identified on the carrier’s air waybill. An example FedEx Airbill is provided below.

- “To” / “From” Information (“A” in illustration above): Complete “To” and “From” information.
- Priority Shipping (“B” in illustration above): It is highly recommended that all packages with dry ice be shipped priority overnight whenever possible. Insulated containers will still sublimate an estimated 5 to 10 pounds of dry ice in a 24-hour period. Actual time frames will vary depending on the package used and volume and density of dry ice.
- Other Packaging (“C” in illustration above): Select “Other” packaging. FedEx packaging cannot be used to ship these materials.
- Dangerous Goods Designation (“D” in illustration above): Select the “Yes Shipper’s Declaration not required” box.
- Nature and Quantity of Goods: The proper shipping name, hazard class, UN identification number, number of packages, and net weight must be entered on the carrier’s air waybill.
  — Pre-Printed (e.g., FedEx Airbills) (“E” in illustration above): FedEx pre-prints this information in Section 6 of their FedEx USA Airbill for domestic service. Complete the following:
    1. Check the Dry Ice box.
    2. Enter the total number of packages and net weight of dry ice per package in kilograms.
  — Not Pre-Printed Information: If the information is not pre-printed, the following information must be entered in the Nature and Quantity of Goods section of the carrier’s airwaybill:
    1. Enter “UN1845, Dry Ice, 9” or “UN1845, Carbon Dioxide, Solid, 9”.
    2. (Enter # of packages) x (Enter net weight per package, in kilograms). For example package: 1 x 5 kg.
- Number of Packages (“F” in illustration above): Enter the number of packages shipped (typically “1”) and the total weight.

17.0 Shipper’s Declaration for Dangerous Goods
A Shipper’s Declaration for Dangerous Goods is always required for the shipment of Category A Infectious Substances. A completed example of a Shipper’s Declaration for one dangerous good shipped (e.g., Category A Infectious Substance, ambient or ice packs, without Dry Ice) is provided in Appendix F. A completed example of a Shipper’s Declaration for two dangerous good shipped (e.g., Category A Infectious Substance with Dry Ice) is provided in Appendix G.
17.1 SHIPPER’S DECLARATION – FEDEX APPROVED VENDOR SOFTWARE
Fed-Ex requires all Shippers Declarations to be prepared using FedEx-approved third party software with error checking capabilities. In past years, shippers could use fillable PDF documents to prepare Shippers Declarations. This is no longer allowed. **Contact EHS for access to FedEx-approved Shipper’s Declaration software.**

17.2 GENERAL REQUIREMENTS
- The person completing the form must be Biological Material and Dry Ice Shipments trained within the past two years (refer to Section 19.0 of this manual).
- The Shipper’s Declaration must be completed in English using the online Shipper Declaration software to prepare the document. The use of historical, fillable PDFs is no longer accepted by FedEx.
- Three (3) color copies with vertical red hatchings must accompany the shipment. Each copy must be identical and comply with all the requirements.
- The Shipper’s Declaration form must fit on one page. If the declaration form does not contain sufficient space, additional Shipper’s Declaration forms may be used and must show:
  - A page number and the total number of pages,
  - The Air Waybill number, and
  - Aircraft limitation and shipment type must be the same on all pages.
- Alterations and amendments made to the Shipper’s Declaration must be signed with the same signature used to sign the document (refer to Section 4.12).

17.3 24-HOUR EMERGENCY RESPONSE INFORMATION
IATA and USDOT require that the Shipper’s Declaration identify an emergency response contact that is immediately available 24-hours to provide technical information and emergency response guidance. To satisfy this requirement, Weill Cornell Medical College retains the services of CHEMTREC and utilizes their 24-hour emergency telephone number.

**In order to utilize this service, shippers must:**
- Complete the Shipper’s Declaration and provide the CHEMTREC emergency contact information outlined in the Shipper’s Declaration Instructions.
- **A copy of the Shipper’s Declaration must be submitted to CHEMTREC - SDS Department (Fax: 703-741-6090) prior to shipping.** The cover page for the submission must identify the following:
  - “CHEMTREC - SDS Department”
  - “Weill Cornell Medical College Customer Code – 24294”

17.4 SHIPPER’S DECLARATION INSTRUCTIONS
- **Shipper and Consignee Information ("A" in Appendix F/G):** Enter the full name and address of the shipper and consignee. Shipper information must be as follows in order to comply with 24-Hour Emergency Contact Information.
  - **Weill Cornell Medical College**
  - c/o (Shipper name or Principal Investigator)
  - Street Address

- **Air Waybill Number ("B" in Appendix F/G):** Enter the carrier’s air waybill unique tracking number.
- **Page Number(s) ("C" in Appendix F/G):** Enter the page number(s), typically “1 of 1”.
- **Transport Details / Limitations ("D" in Appendix F/G):**
  - For shipments of Infectious Substances – Category A utilizing the Cargo Aircraft Only outer packing limits in accordance with Section 10.1.2.2 cross-out or XXX-out “Passenger and Cargo Aircraft”.
  - For all other shipments packaged in accordance with this procedure cross-out or XXX-out “Cargo Aircraft Only”.
- **Airport of Departure and Destination ("E" in Appendix F/G):** If this is unknown, enter in the city, state and country associated with the Shipper and Consignee in the respective Departure and Destination boxes.
- **Shipment Type ("F" in Appendix F/G):** Cross-out or XXX-out the word “Radioactive".
17.4.1 Nature and Quantity of Dangerous Goods

Utilize the following table to assist in completing the Nature and Quantity of Dangerous Goods portion of the Shipper’s Declaration. Select the appropriate proper shipping name(s) which identify the dangerous goods being shipped and fill in the related information onto the Shipper’s Declaration.

<table>
<thead>
<tr>
<th>UN or ID No.</th>
<th>Proper Shipping Name</th>
<th>Class or Division “H”</th>
<th>Packing Group “J”</th>
<th>Packing Inst. “L”</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN2814</td>
<td>Infectious Substance, Affecting Humans (Insert Technical Name of Infectious Substance)</td>
<td>6.2</td>
<td>620</td>
<td></td>
</tr>
<tr>
<td>UN2900</td>
<td>Infectious Substance, Affecting Animals (Insert Technical Name of Infectious Substance)</td>
<td>6.2</td>
<td>620</td>
<td></td>
</tr>
<tr>
<td>UN3245</td>
<td>Genetically Modified Micro-Organisms</td>
<td>9</td>
<td>959</td>
<td></td>
</tr>
<tr>
<td>UN3245</td>
<td>Genetically Modified Organisms</td>
<td>9</td>
<td>959</td>
<td></td>
</tr>
<tr>
<td>UN3373</td>
<td>Biological Substance, Category B</td>
<td>6.2</td>
<td>650</td>
<td></td>
</tr>
<tr>
<td>UN1845</td>
<td>Dry Ice or Carbon Dioxide, Solid</td>
<td>9</td>
<td>954</td>
<td></td>
</tr>
</tbody>
</table>

- **Technical Names** must be a recognized microbiological names currently used in scientific and technical handbooks, journals, and texts. Do not use abbreviations. Spell-out the full name of the infectious substance/disease.
- **Unknown but Suspected Category A Infectious Substance** - If the infectious substance being transported as UN2814 or UN2900 is unknown but suspected of meeting the criteria for inclusion in Category A the words “Suspected Category A Infectious Substance” must be listed as the technical name.

17.4.2 Quantity and Type of Packaging

- **One Dangerous Good Shipped** (“K” in Appendix F): Identify the number and type of packages and net quantity of the dangerous goods. The unit of measure for the net quantity must be the same as indicated in the “Container Size Limitations” for the dangerous goods specific shipper requirements. Examples include:
  - “1 fiberboard box x 25 g” where 1 package contains 25 total grams of the solid biological material.
  - “2 fiberboard boxes x 25 ml” where 2 packages contain 25 total milliliters per package of liquid biological material.

- **Two or More Dangerous Goods Shipped** (“K” in Appendix G): When two or more different dangerous goods are packed into the same outer package (i.e. multiple types of biological materials and/or dry ice), only indicate the net quantity of the dangerous goods on the corresponding line of the Shipper’s Declaration. The unit of measure for the net quantity must be the same as indicated in the “Container Size Limitations” for the dangerous goods specific shipper requirements.
  - Underneath the last dangerous good in this package, write “ALL PACKED IN ONE” and then type of package (e.g., “All packed in one fiberboard box”).

- **Authorization** (“M” in Appendix F/G): If the special provision referred to in Section 10.1.2.3 was utilized for this shipment, then “A81” must be listed in this portion of the Shipper’s Declaration. Otherwise, leave this area blank.

- **Additional Handling Information** (“N” in Appendix F/G):
  - Responsible Person Contact Information: The name and telephone number of a responsible person must be included on the Shipper's Declaration for infectious substances in Category A (UN 2814 and UN 2900). This should be the shipper or someone else familiar with the contents of the shipment but is not the 24-hour Emergency Contact. Provide the following Responsible Person Contact Information in the Additional Handling section:
    
    “Responsible Person: (Insert Shipper Name and Phone Number)”

  - 24-Hour Emergency Contact: EHS has contracted the services of CHEMTREC to serve as the 24-hour emergency contact for WCM shipments. As such, “Weill Cornell Medical College” must appear on the first line of the “Shipper” information on the Shipper’s Declaration. Provide the following 24-Hour Emergency Contact information in the Additional Handling section:
    
    “24-Hour Emergency Contact: CHEMTREC: 800-424-9300 (Weill Cornell Medical College Customer Code – 24294)”
CONTINUED: Biological Materials and Dry Ice Shipments Manual

17.5 EMERGENCY TELEPHONE NUMBER ("O" IN APPENDIX F/G)
If the Shipper’s Declaration form includes a separate Emergency Telephone Number section, enter the following information. Otherwise, the 24-Hour Emergency Contact information provided in the Additional Handling Information section will suffice.


17.6 CERTIFICATION STATEMENT AND SIGNATURE ("P" IN APPENDIX F/G)
Enter the name and title of the signatory, both are required. The person signing the Shipper’s Declaration must be properly trained and have first-hand knowledge of the shipment. While it is acceptable to have an untrained Principle Investigator, Doctor, or Manager’s name listed in the Shipper Section, the Certification Section must identify and be signed by only the trained shipper.

Additionally, given the fact that the new FedEx version of this document allows for the use of a typed signature, it is only permissible for the trained shipper to type her or his name, as typing in the name of another person constitutes forging their signature.

18.0 Additional Carrier Requirements (Airway Bills)
In addition to the requirements established by IATA for the transport of dangerous goods by air, specific carriers may have more stringent requirements. The shipper must contact their intended carrier and verify if the carrier has any additional requirements from those specified in this Manual. The following are additional limitations for a few common carriers which relate to shipment of biological materials.

18.1 FEDERAL EXPRESS (FEDEX)
The following are the additional requirements and limitations for FedEx:

- **Shipper’s Declaration** – FedEx Approved Vendor Software: FedEx requires all Shippers Declarations to be prepared using FedEx-approved third party software with error checking capabilities. In past years, shippers could use fillable PDF documents to prepare Shippers Declarations. This is no longer allowed. Contact EHS for access to FedEx-approved Shipper’s Declaration software.
- **Shipper’s Declaration** – Three Copies: When a Shipper’s Declaration is required, three (3) color copies must be provided with each shipment at the origin location.

18.2 UNITED PARCEL SERVICE (UPS)
The following are the additional requirements and limitations for UPS:

- **Category A Infections Substances**: UPS will not accept shipments of Category A Infectious Substances. UPS will only accept shipments of:
  - Category B Biological Substances
  - Exempt Patient Specimens
  - Non-Regulated Specimens
- **Contracted Services**: International shipments of Category B Biological Substances without an approved contract with UPS are prohibited. Shippers must establish contracted services with UPS in order to ship Category B substances.

19.0 Pre-Shipment Storage and Security
All packages of dangerous goods prepared in accordance with this Manual must remain in the possession of and under the supervision of the Shipper until collected by the transport company. The use of drop box locations is prohibited. Additionally, any concerns regarding unauthorized personnel representing a possible security threat must be reported to NYP Security (212-746-0911) and EHS immediately.
20.0 Training
All Weill Cornell Medical College employees who prepare shipments and/or complete the shipping documents (i.e., "shippers") in accordance with this procedure must satisfactorily complete Biological Material and Dry Ice Shipper Training and related safety training before conducting a shipping activity. Training must be recurrent at least once every two years.

20.1 SAFETY TRAINING
Safety training is a required component for dangerous goods shipment training. This requirement is satisfied with the completion of either (1) Laboratory Safety or (2) Clinical and General Safety trainings.

- **Laboratory Safety Training** is required for shippers working in laboratories that handle or use biological materials and chemicals (e.g., dry ice or chemical preservatives).
- **Clinical and General Safety Training** is required for shippers working in clinical areas that handle clinical specimens and chemicals (e.g., dry ice, formalin).

20.2 BIOLOGICAL MATERIAL AND DRY ICE SHIPMENTS TRAINING
Biological Material and Dry Ice Shipments training consists of two components:

- **Biological Material and Dry Ice Shipments Training Course**: Shippers must attend the Biological Material and Dry Ice Shipment Training course once every two years and successfully pass the Biological Material and Dry Ice Shipment competency test. Upon successful completion of the training course and competency test, the shipper will be provided a certificate of training. Only upon receipt of this certificate is the training attendee authorized to act as the shipper of biological materials or dry ice.
- **Prior to Shipping Biological Materials and Dry Ice**: Shippers must have read and be familiar with the requirements identified in the most current version of this procedure prior to each shipment.
- **Note**: that IATA re-issues its regulations on an annual basis and may revise the shipper requirements throughout the course of the year. All necessary revisions will be made accordingly by EHS to this Manual; it is the shipper’s responsibility to ensure they are using the most up-to-date version of the manual which will be posted on the EHS website.

21.0 Record Retention, Availability, and Revisions

21.1 TRAINING RECORDS
Once training has been completed, Certificates of Training will be provided to shippers who have successfully completed the training requirements. A printed copy of your training certificate must be centrally filed for a minimum of three years and be readily available for inspection. If training is conducted by a training entity other than EHS, then it is the responsibility of the shipper to obtain and maintain copies of their training records and training materials.

21.2 SHIPPING DOCUMENTS
Shipping documents, (e.g. Shipper’s Declaration for Dangerous Goods, Airbills, and Commercial Invoices) must be retained by the Shipper for a minimum of 2 years from the date of shipment and made available upon request by EHS or a governing agency.

21.3 PACKAGING CLOSURE INSTRUCTIONS
Packaging closure instructions for DOT Specification or UN standard packaging subject to federal and international shipping regulations must be retained for a minimum of 90 days.

21.4 REVISIONS
IATA revises the Dangerous Goods Regulations on an annual basis and/or throughout the course of the year. This procedure will be updated by EHS accordingly. Shippers must ensure that all shipments of biological materials are in accordance with the most current version of this procedure. The most current version of this procedure will be posted on the EHS website.
22.0 Definitions

**Biological products** are those 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.

**Carrier(s)** means a person or entity engaged in the transportation of passengers or property by:
- Land or water, as a common, contract, or private carrier, or
- Civil aircraft.

**Corrosives (Class 8)** are substances which by chemical action, can cause severe damage when in contact with living tissue or, in the case of leakage will materially damage or even destroy, other goods or the means of transport. Refer to the MSDS or contact EHS to determine if the substance is corrosive.

**Cultures** are the result of a process by which pathogens are intentionally propagated. This definition does not include patient specimens.

**Dangerous goods** are articles or substances which are capable of posing a risk to health, safety, property or the environment. General classifications of dangerous goods include explosives, gases, flammable liquids, flammable solids, spontaneously combustibles, waterreactives, oxidizers, organic peroxides, toxic and infectious substances, radioactive material, corrosives, and miscellaneous.

**Flammable liquid (Class 3)** comprises liquids or mixtures of liquids or liquids containing solids in solution or in suspension which give off a flammable vapor at temperatures of not more than 60°C (140°F) closed-cup test. Refer to the MSDS or contact EHS to determine if the substance is a flammable liquid.

**Foreign national** is any person other than a US citizen, US permanent or temporary legal resident alien, or person in US custody.

**Genetically modified micro-organisms and organisms** are micro-organisms (GMMO) and organisms (GMO) in which genetic material has been purposely altered though genetic engineering in a way that does not occur naturally.

**Infectious substances** are substances which are known or are reasonably expected to contain pathogens.

**Miscellaneous Dangerous Goods (Class 9)** are articles and substances, which during air transport, present a danger not covered by other classes. Refer to the MSDS or contact EHS to determine if the substance is a miscellaneous dangerous good.

**Net quantity** is the weight or volume of the dangerous goods contained in a package excluding the weight or volume of any packaging material. Note, only International System units of measure (e.g., kg, g, L, ml, etc.) may be used when shipping dangerous goods by air.

**Pathogens** are micro-organisms (including bacteria, viruses, rickettsia, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

**Patient specimens** are those collected directly from humans or animals, including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluid swabs, and body parts being transported for purposes such as research, diagnosis, investigational activities, disease treatment and prevention.

**Select agents and toxins** are viruses, bacteria, rickettsia, fungi, and toxins that, according to U.S. Department of Human Health Services and the U.S. Department of Agriculture, have the potential to cause substantial harm to public health, animal or plant health, or to animal or plant products. The shipment of select agents can only be conducted by the WCM Responsible Official. Contact EHS for further assistance in shipping Select Agents.

**Shipper(s)** refers to WCM faculty, staff, employees, or students who perform any of the activities in steps 3 through 9 of the shipment process identified in Section 3.0 – Objective.

**World Health Organization (WHO) Risk Group** is characterized by the pathogenicity of the organism, the mode and relative ease of transmission, the degree of risk to both an individual and a community, and the reversibility of the disease through the availability of known and effective preventative agents and treatment. The Risk Group criteria are developed and published in the World Health Organization Laboratory Biosafety Manual (third edition, 2004).

**Risk Group 4** (high individual and community risk): a pathogen that usually causes serious human or animal disease and that can be readily transmitted from one individual to another, directly or indirectly, and for which effective treatment and preventative measures are not usually available.
23.0 References

- 49 CFR Subchapter C – Hazardous Materials Regulations
- American Biological Safety Association (http://www.absa.org/riskgroups/index.html)
- Federal Express – Dangerous Goods Shipping
- National Select Agent Registry (http://www.selectagents.gov/)
- University of New Hampshire Shipment of Biological Material Manual
- UPS Guide to Shipping International Dangerous Goods
- UPS Guide to Shipping Ground and Air Hazardous Materials
### Dangerous Goods Regulations

#### Appendix A – IATA Provisions for Dangerous Goods Carried by Passengers or Crew

**TABLE 2.3.A**

<table>
<thead>
<tr>
<th>Permitted in or as carry-on baggage</th>
<th>Permitted in or as checked baggage</th>
<th>The approval of the operator(s) is required</th>
<th>Note</th>
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</tbody>
</table>

**Notes:**
- **Dangerous Goods:** Must not be carried in or as passengers or crew, checked or carry-on baggage, except as otherwise provided.
- **Provisions:** Table 2.3.A contains provisions for dangerous goods carried by passengers or crew during travel.
- **Approval:** The approval of the operator(s) is required for certain items.
- **Transport:** Various items are permitted in carry-on or checked baggage with specific conditions and approval requirements.

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**5th EDITION, 1 JANUARY 2014**
### TABLE 2.3.A
Provisions for Dangerous Goods Carried by Passengers or Crew
(Subsection 2.3) (continued)

<table>
<thead>
<tr>
<th>Permitted in or as carry-on baggage</th>
<th>Permitted in or as checked baggage</th>
<th>On one's person</th>
<th>The approval of the operator(s) is required</th>
<th>The plot-in-command must be informed of the location</th>
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<tr>
<td>YES</td>
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</tbody>
</table>

**Note:**

*n/a* means not applicable
### Appendix C – HSS and USDA Select Agents and Toxins

#### HHS and USDA Select Agents and Toxins

<table>
<thead>
<tr>
<th>HHS Select Agents and Toxins</th>
<th>USDA Select Agents and Toxins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abcin</td>
<td>Bacillus anthracis*</td>
</tr>
<tr>
<td>Botulimum neurotoxins*</td>
<td>Bacillus anthracis Pasteur strain</td>
</tr>
<tr>
<td>Clostridium*</td>
<td>Brucella abortus</td>
</tr>
<tr>
<td>Conotoxins (Short, paralytic alpha conotoxins)</td>
<td>Brucella melitensis</td>
</tr>
<tr>
<td>containing the following amino acid sequence X_C:C_X-PAC_GX(X_C:C)_X</td>
<td>Brucella suis</td>
</tr>
<tr>
<td>Coxiella burnetii</td>
<td>Burkholderia mallei*</td>
</tr>
<tr>
<td>Crimean-Congo haemorrhagic fever virus</td>
<td>Burkholderia pseudomallei*</td>
</tr>
<tr>
<td>Diaceotocins</td>
<td>Hendra virus</td>
</tr>
<tr>
<td>Eastern Equine Encephalitis virus</td>
<td>Nipah virus</td>
</tr>
<tr>
<td>Ebola virus*</td>
<td>Rift Valley fever virus</td>
</tr>
<tr>
<td>Francisella tularensis</td>
<td>Venezuelan equine encephalitis virus</td>
</tr>
<tr>
<td>Lea fever virus</td>
<td></td>
</tr>
<tr>
<td>Luigi virus</td>
<td></td>
</tr>
<tr>
<td>Marburg virus*</td>
<td></td>
</tr>
<tr>
<td>Monkeypox virus</td>
<td></td>
</tr>
<tr>
<td>Recombinant replication competent forms of the 1918 pandemic influenza virus containing any portion of the coding regions of all eight gene segments (Reconstructed 1918 influenza virus)</td>
<td></td>
</tr>
<tr>
<td>Ricin</td>
<td>African horse sickness virus</td>
</tr>
<tr>
<td>Ricista proszeki</td>
<td>African swine fever virus</td>
</tr>
<tr>
<td>SARS-associated coronavirus (SARS-CoV)</td>
<td>Avian influenza virus</td>
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<tr>
<td>Saxitoxin</td>
<td>Classical swine fever virus</td>
</tr>
<tr>
<td>South American Haemorrhagic Fever viruses:</td>
<td>Foot-and-mouth disease virus*</td>
</tr>
<tr>
<td>Chapara</td>
<td>Goat pox virus</td>
</tr>
<tr>
<td>Guanarito</td>
<td>Lumpy skin disease virus</td>
</tr>
<tr>
<td>Junin</td>
<td>Mycoplasma capricolum</td>
</tr>
<tr>
<td>Machupo</td>
<td>Mycoplasma mycoides</td>
</tr>
<tr>
<td>Sabia</td>
<td>Newcastle disease virus</td>
</tr>
<tr>
<td>Staphylococcal enterotoxins A,B,C,D,E subtypes</td>
<td>Paste des petits ruminants virus</td>
</tr>
<tr>
<td>T-2 toxin</td>
<td>Rinderpest virus*</td>
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<tr>
<td>Tetrodotoxin</td>
<td>Sheep pox virus</td>
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<tr>
<td>Tick-borne encephalitis complex (flav) viruses:</td>
<td>Swine vesicular disease virus</td>
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<tr>
<td>Far Eastern subtype</td>
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<tr>
<td>Sibarian subtype</td>
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<tr>
<td>Kyasanur Forest disease virus</td>
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</tr>
<tr>
<td>Omsk hemorrhagic fever virus</td>
<td></td>
</tr>
<tr>
<td>Variola major virus (Smallpox virus)*</td>
<td></td>
</tr>
<tr>
<td>Variola minor virus (Alasim)*</td>
<td></td>
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<tr>
<td>Yersinia pestis*</td>
<td></td>
</tr>
</tbody>
</table>

*Denotes Tier 1 Agent

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1 A virulent Newcastle disease virus (avian paramyxovirus serotype 1) has an intracerebral pathogenicity index in day-old chicks (P.I. D.O.) of 0.9 or greater and has an amino acid sequence at the fusion (F) protein cleavage site that is consistent with virulent strains of Newcastle disease virus. A failure to detect a cleavage site that is consistent with virulent strains does not confirm the absence of a virulent virus.

10/4/2013
### Appendix D – Indicative List of Category A Infectious Substances

#### INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814

<table>
<thead>
<tr>
<th>Substances</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacillus anthracis (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Brucella abortus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Brucella melitensis (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Brucella suis (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Burkholderia mallei – Pseudomonas mallei – Glanders (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Burkholderia pseudomallei – Pseudomonas pseudomallei (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Chlamydia psittaci – avian strains (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Clostridium botulinum (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Coccidioides immitis (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Coxiella burnetii (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
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<tr>
<td>Crimean-Congo hemorrhagic fever virus</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
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<tr>
<td>Dengue virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
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<tr>
<td>Eastern equine encephalitis virus (cultures only)</td>
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<td>Ebola virus</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
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<tr>
<td>Escherichia coli, verotoxigenic (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
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<td>Flexal virus</td>
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<tr>
<td>Francisella tularensis (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
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<tr>
<td>Guanarito virus</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
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<tr>
<td>Hantaan virus</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
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<tr>
<td>Hantavirus causing hemorrhagic fever with renal syndrome</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
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<tr>
<td>Hendra virus</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Hepatitis B virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Herpes B virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Highly pathogenic avian influenza virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
<tr>
<td>Human immunodeficiency virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING HUMANS, UN2814</td>
</tr>
</tbody>
</table>

#### INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900

<table>
<thead>
<tr>
<th>Substances</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>African swine fever virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Avian paramyxovirus Type 1 – Velogenic newcastle disease virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Classical swine fever virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Foot and mouth disease virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Goatpox virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Lumpy skin disease virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>African swine fever virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Avian paramyxovirus Type 1 – Velogenic newcastle disease virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Classical swine fever virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Foot and mouth disease virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Goatpox virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Lumpy skin disease virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Mycoplasma mycoides – Contagious bovine pleuropneumonia (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Peste des petits ruminants virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Rinderpest virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Sheep-pox virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Swine vesicular disease virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
<tr>
<td>Vesicular stomatitis virus (cultures only)</td>
<td>INFECTIOUS SUBSTANCES, AFFECTING ANIMALS, UN2900</td>
</tr>
</tbody>
</table>
## Appendix E – Packaging Supplier List

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Phone Number</th>
<th>Website Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Sea Atlanta</td>
<td>(404) 351-8600</td>
<td><a href="http://www.airseaatlanta.com">http://www.airseaatlanta.com</a></td>
</tr>
<tr>
<td>Berlin Packaging</td>
<td>(800) 229-7546</td>
<td><a href="http://www.berlinpackaging.com/">http://www.berlinpackaging.com/</a></td>
</tr>
<tr>
<td>CARGOpak Corp.</td>
<td>(800) 266-0652</td>
<td><a href="http://www.cargopak.com/">http://www.cargopak.com/</a></td>
</tr>
<tr>
<td>DG Supplies, Inc.</td>
<td>(800) 347-7879</td>
<td><a href="http://www.dgsupplies.com">http://www.dgsupplies.com</a></td>
</tr>
<tr>
<td>EXAKT Technologies, Inc.</td>
<td>(800) 866-7172</td>
<td><a href="http://www.exaktpak.com">http://www.exaktpak.com</a></td>
</tr>
<tr>
<td>Fisher Scientific</td>
<td>(800) 766-7000</td>
<td><a href="http://www.fishersci.com">http://www.fishersci.com</a></td>
</tr>
<tr>
<td>Grainger</td>
<td>(800) 472-4643</td>
<td><a href="http://www.grainger.com/">http://www.grainger.com/</a></td>
</tr>
<tr>
<td>HAZMATPAC, Inc.</td>
<td>(800) 923-9123</td>
<td><a href="http://www.hazmatpac.com">http://www.hazmatpac.com</a></td>
</tr>
<tr>
<td>Inmark, Inc.</td>
<td>(800) 646-6275</td>
<td><a href="http://www.inmarkinc.com">http://www.inmarkinc.com</a></td>
</tr>
<tr>
<td>Saf-T-Pak, Inc.</td>
<td>(800) 814-7484</td>
<td><a href="http://www.saftpak.com">http://www.saftpak.com</a></td>
</tr>
<tr>
<td>Therapak Corporation</td>
<td>(888) 505-7377</td>
<td><a href="http://www.therapak.com">http://www.therapak.com</a></td>
</tr>
<tr>
<td>ThermoSafe Brands</td>
<td>(800) 323-7442</td>
<td><a href="http://www.thermosafe.com/">http://www.thermosafe.com/</a></td>
</tr>
<tr>
<td>VWR Scientific</td>
<td>(800) 932-5000</td>
<td><a href="http://www.vwrsp.com">http://www.vwrsp.com</a></td>
</tr>
</tbody>
</table>
Appendix F – Example Shipper’s Declaration Form – One Dangerous Goods

<table>
<thead>
<tr>
<th>SHIPPER'S DECLARATION FOR DANGEROUS GOODS</th>
<th>(Provide at least three copies to the airline.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipper</td>
<td>Well Cornell Medical College</td>
</tr>
<tr>
<td></td>
<td>Dr. Robert Smith</td>
</tr>
<tr>
<td></td>
<td>1300 York Avenue</td>
</tr>
<tr>
<td></td>
<td>New York, NY 10065</td>
</tr>
<tr>
<td>Consignee</td>
<td>John Doe</td>
</tr>
<tr>
<td></td>
<td>ABC Company</td>
</tr>
<tr>
<td></td>
<td>123 Main Street</td>
</tr>
<tr>
<td></td>
<td>Baltimore, MD 21231</td>
</tr>
<tr>
<td>Air Waybill No.</td>
<td>844964519855</td>
</tr>
<tr>
<td>Page</td>
<td>1 of 1 Pages</td>
</tr>
<tr>
<td>Shipper’s Reference Number</td>
<td></td>
</tr>
</tbody>
</table>

**TRANSPORT DETAILS**

- Airwaybill No.: 844964519855
- Page: 1 of 1 Pages
- Shipper’s Reference Number: 

---

**WARNING**

Failure to comply with all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.

**NATURE AND QUANTITY OF DANGEROUS GOODS**

<table>
<thead>
<tr>
<th>UN or ID</th>
<th>Proper Shipping Name</th>
<th>Class or Division (as defined by IATA)</th>
<th>Packing Group</th>
<th>Quantity and Type of Packaging</th>
<th>Packing Inst.</th>
<th>Authorization</th>
</tr>
</thead>
<tbody>
<tr>
<td>2814</td>
<td>Infectious Substance, Affecting Humans (Human immunodeficiency virus-cultures only)</td>
<td>6.2</td>
<td>1 fiberboard box x 25 g</td>
<td>620</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Handling Information**

- Responsible Person: Jane Doe 212-746-0900
- Emergency Contact: CHEMTREC 800-424-9300

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/discharded, and are in all respects in proper condition for transport according to applicable International and National Governmental Regulations. I declare that all of the applicable air transport requirements have been met.

**Emergency Telephone Number**

800-424-9300

**FOR RADIOACTIVE MATERIAL SHIPMENT ACCEPTABLE FOR PASSENGER AIRCRAFT, THE SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN OR INCIDENT TO RESEARCH, MEDICAL DIAGNOSIS, OR TREATMENT, FOR EUROPEAN TRANSPORT STATEMENT, CARRIAGE IN ACCORDANCE WITH 1.4.2.1.**

**Name/Title of Signatory**

Jane Doe/Dangerous Goods Shipper

**Place and Date**

New York, NY April 9, 2010

**Signature**

[Handwritten signature with typed, if necessary]

Jane Doe
Appendix G – Example Shipper’s Declaration Form – Two or More Dangerous Goods

<table>
<thead>
<tr>
<th>SHIPPER’S DECLARATION FOR DANGEROUS GOODS</th>
<th>(Provide at least three copies to the airline.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shipper</strong></td>
<td>Well Cornell Medical College</td>
</tr>
<tr>
<td></td>
<td>Dr. Robert Smith</td>
</tr>
<tr>
<td></td>
<td>1300 York Avenue</td>
</tr>
<tr>
<td></td>
<td>New York, NY 10065</td>
</tr>
<tr>
<td><strong>Air Waybill No.</strong></td>
<td>844964519855</td>
</tr>
<tr>
<td><strong>Page 1 of 1 Pages</strong></td>
<td>Shipper’s Reference Number</td>
</tr>
<tr>
<td><strong>Consignee</strong></td>
<td>John Doe</td>
</tr>
<tr>
<td></td>
<td>ABC Company</td>
</tr>
<tr>
<td></td>
<td>123 Main Street</td>
</tr>
<tr>
<td></td>
<td>Baltimore, MD 21231</td>
</tr>
<tr>
<td><strong>Airport of Departure</strong></td>
<td>New York, NY</td>
</tr>
<tr>
<td><strong>Airport of Destination</strong></td>
<td>Baltimore, MD</td>
</tr>
<tr>
<td><strong>Transport Details</strong></td>
<td></td>
</tr>
</tbody>
</table>

**WARNING**

Failure to comply with all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.

**Paint or Explosive**

**Non RADIOACTIVE**

**Shipment type:** (circle one applicable)

<table>
<thead>
<tr>
<th><strong>D</strong></th>
<th><strong>E</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Nature and Quantity of Dangerous Goods**

<table>
<thead>
<tr>
<th><strong>G</strong></th>
<th><strong>H</strong></th>
<th><strong>I</strong></th>
<th><strong>J</strong></th>
<th><strong>K</strong></th>
<th><strong>L</strong></th>
<th><strong>M</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 2814</td>
<td>Infectious Substance, Affecting Humans (Human immunodeficiency virus-cultures only)</td>
<td>6.2</td>
<td>25 g</td>
<td>620</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UN 1845</td>
<td>Dry Ice</td>
<td>9</td>
<td>20 kg</td>
<td>954</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Handling Information**

<table>
<thead>
<tr>
<th><strong>N</strong></th>
<th><strong>O</strong></th>
<th><strong>P</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible Person: Jane Doe 212-746-0000</td>
<td>Emergency Contact: CHEMTREC 800-424-9300</td>
<td>(Well Cornell Medical College Customer Code - 24234)</td>
</tr>
</tbody>
</table>

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/packaged, and are in all respects in proper condition for transport according to applicable International and National Governmental Regulations. I declare that all of the applicable air transport requirements have been met.

**Name/Title of Signatory**

Jana Doe/Dangerous Goods Shipper

**Place and Date**

New York, NY April 9, 2018

**Signature**

[Signature] (If printed signature may be used if the original and facsimiles (see warning above) are in the United States or its territories)

Emergency Telephone Number: 800-424-9300