

## Infectious Substances Category A- IATA Packing Instructions

### P620 (UN/ICAO PI 620 Air Mode) Job Aid

#### Applicability

This document applies to all personnel of AHS Laboratory Services, the Lamont Health Centre and laboratories administered by Covenant Health.

#### Purpose

This document provides instruction for packaging infectious substances in Category A and designated as UN 2814 or UN 2900.

#### Background

Patient specimens are classified as **Infectious Substance Category A** when:

- The specimen is from a patient who is known or suspected to have an infectious disease.
- The pathogen involved is a Category A Infectious Substance.
  - The patient must be diagnosed with an infectious disease or there must be some indication that the physician suspects that the patient may have a specific infectious disease. This information may come directly from the physician, another healthcare worker, or it may be indicated on the requisition.
  - Refer to Appendix A – Category A Infectious Substances in Classification of Infectious Substances for a complete list of Category A substances.
- Special training, packaging, documentation, reporting practices and emergency response plans are required for these specimens. **DO NOT SHIP** until after **CONSULTATION WITH THE Microbiologist-On-Call, Zone Safety Representative or Biological Safety Officer / Laboratory Safety Coordinator (Provincial)**.

#### Guidelines

##### Packaging Requirements

Follow package manufacturer's instructions.

The basic triple packaging system is used with the follow specifications:

- Inner packaging comprising:
  - Watertight (leak-proof) primary receptacle. The primary receptacle shall be packed in the secondary packaging in such a way that, under normal conditions of transport, they cannot break, be punctured, or leak their contents into the secondary packaging.
  - Primary receptacle or secondary packaging must withstand without leakage an internal pressure differential of 95 kPa in a range of -40°C to +55°C.
  - Watertight (leak-proof) secondary packaging, no larger than 4 litres or 4 kilograms. This quantity excludes ice, dry ice or liquid nitrogen when used to keep specimens cold.
  - Secondary packaging shall be secured in outer packaging with suitable cushioning material. Any leakage of the contents shall not compromise the integrity of the cushioning material or of the outer package.

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- Other than for solid infectious substances, an absorbent material in sufficient quantity to absorb the entire contents placed between the primary receptacle(s) and the secondary packaging;
- If multiple fragile primary receptacle(s) are placed in a single secondary packaging, they shall be either individually wrapped or separated so as to prevent contact between them;
- Inner packagings containing infectious substances **shall not** be consolidated with inner packagings containing unrelated types of goods.
- A rigid outer packaging of adequate strength for its capacity, mass and intended use. The smallest external dimension shall not be less than 100 x 100 mm (4 inches x 4 inches).
  - For ground transport (road, rail, sea) the limits per package are 400 kg for solids or 450 L for liquids.
  - For air transport the limits per package are:
    - **Passenger & Cargo Aircraft:** 50 mL or 50g
    - **Cargo Aircraft ONLY:** 4 L or 4 kg
- For substances shipped refrigerated or frozen (i.e. wet ice, pre-frozen packs, dry ice)
  - Dry Ice must be placed outside the secondary packaging(s) or in an overpack with one or more completed packagings. Interior support must be provided to secure the secondary packaging in the original position after the ice has dissipated. If dry ice is used the outer packaging must permit the release of carbon dioxide gas. The primary receptacle and the secondary packaging shall maintain the integrity of the sample at the temperature of the refrigerant used.
  - If wet ice is used the packaging must be leak-proof.

#### Additional Requirements

- Other than for exceptional consignments (i.e. whole organs which require special packaging) the following additional requirements shall apply:
  - *Substances consigned at ambient temperatures or at a higher temperature:* Primary receptacles shall be of glass, metal or plastics. Positive means of ensuring a leak proof seal shall be provided (i.e. heat seal, skirted stopper, metal crimp seal). If screw caps are used, they shall be secured by positive means (tape, paraffin sealing tape, manufactured locking closure).
  - *Substances consigned in liquid nitrogen:* Plastic primary receptacles capable of withstanding very low temperatures shall be used. The secondary packaging shall also be capable of withstanding very low temperatures, and in most cases will need to be fitted over the primary receptacle individually. Provisions for the consignment of liquid nitrogen shall also be fulfilled. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the liquid nitrogen.
  - *Lyophilized substances:* may also be carried in primary receptacles that are flame-sealed glass ampoules or rubber-stoppered glass vials fitted with metal seals.

#### Marking Labeling (Attached or Stamped on Box)

- The United Nations packaging symbol.
  - An indication of the type of packaging. Refer to Attachment A "UN Packaging Identification Codes Information" for details.
  - The text "Class 6.2". The last two digits of the year of manufacture of the packaging.
  - Authority and manufacturer's code
- Example:

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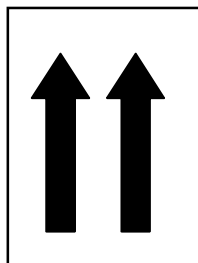
4G/Class 6.2/05/GB/2470

- An Infectious Substance label (marking) shall be displayed on the external surface of the outer packaging on a background of a contrasting color and shall be clearly visible and legible. The width of the line shall be at least 2 mm; the letters and number shall be at least 6 mm high.

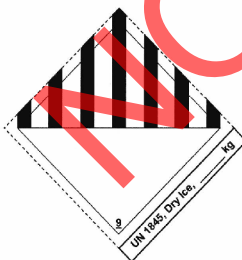


**UN2814**  
**Infectious Substance,**  
**Affecting Humans**

- For liquids, an orientation arrow is required. This is usually preprinted on the packaging however, if not, an orientation label must be applied. If the outer package contains primary receptacles exceeding 50 mL in combination at least two "Orientation Labels" must be placed on opposite sides of the package showing correct orientation of the package.



- When dry ice is used, the class 9 marking shall be applied to the outermost packaging indicating Dry Ice, ICE, UN1845 and the weight of dry ice used.



- Shipper's name, address and telephone number
- Telephone Number of a responsible person, knowledgeable about the shipment.

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- Receiver's name, address and telephone number.
- The UN Number ( UN2814 or UN2900)
- Label as INFECTIOUS SUBSTANCE, AFFECTING HUMANS or INFECTIOUS SUBSTANCE – AFFECTING ANIMALS, Quantity (mL/L or g/Kg)
- Temperature storage requirements.
- If the outer package is further packed in an overpack (with dry ice for instance) both outerpack and overpack must be labeled with the above information, and the overpack must have a label stating "INNER PACKAGES COMPLY WITH PRESCRIBED SPECIFICATIONS".

### Documentation

- **Special Provision A140** (Transport by air): For the purpose of documentation, the proper shipping name must be supplemented with the technical name. Technical names need not be shown on the package. When the infectious substances to be transported are unknown, but suspected of meeting the criteria for inclusion in Category A and assigned to UN 2814 or UN 2900, the words "Suspect Infectious Substance, Category A" must be shown, in parenthesis, following the proper shipping name on the Shipper's Declaration for Dangerous Goods, but not on the outer packaging."
- **Special Provision A81** (Transport by air): The quantity limits do not apply to body parts, organs or whole bodies.
- An itemized list of contents shall be enclosed between the secondary packaging and the outer packaging. When the infectious substance to be transported is unknown, but suspected of meeting the criteria for inclusion in Category A and assignment to UN 2814 or UN2900, the words "SUSPECTED CATEGORY A INFECTIOUS SUBSTANCE" shall be shown, in parentheses, following the proper shipping name on the documents inside the outer packaging.
- Required shipping documents are obtained from the carrier and are fixed to the outer package.
- Documentation includes:
  - The shipper's Declaration of Dangerous Goods (form with fillable format available as separate document).
  - A packing list/pro-forma invoice which includes the receiver's address, the number of packages, detail of contents, weight, value. A value of \$10.00 will be assigned to all samples.
  - An import and/or export permit and/or declaration if required.
  - Waybill (if shipping by air)

### Handling Leaks during Transport

- If there is a leak in transport and the leak could endanger public safety, it must be reported to Transport Canada. Refer to "Response Plan for Accidental Release of Infectious Substances" for details.

### Appendixes

- [Appendix A- UN Packaging Identification Code Information](#)
- [Appendix B – Completing the Shipper's Declaration](#)

### Reference

- Laboratory Services Provincial Health and Safety Manual Sources of Truth-  
<https://ahs.labqms.com/labFrame.asp?DID=25013&FLDVr=1376>

### Related Documents

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- Transportation of Dangerous Goods Policy - <https://ahs.labqms.com/labFrame.asp?DID=24570>
- Transportation of Dangerous Goods Regulations General Information - <https://ahs.labqms.com/labFrame.asp?DID=24581>
- Transportation of Dangerous Goods Class 6.2 and 9.0 - <https://ahs.labqms.com/labFrame.asp?DID=24580>
- Classification of Infectious Substances - <https://ahs.labqms.com/labFrame.asp?DID=24579>
- Shippers Declaration - <https://ahs.labqms.com/labFrame.asp?DID=24575>

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## Appendix A- UN Packaging Identification Code Information

<b>Packaging Identification Codes</b>	
Numeral (1-7) = Type of Packaging	
1= Drum	2= Wooden Barrel
3= Jerrican	4= Box
5= Bag	6= Composite Packaging
7= Pressure Receptacle	
CAPITAL LETTER= CONSTRUCTION MATERIAL	
A= Steel	B= Aluminum
C= Natural Wood	D= Plywood
F= Reconstituted Wood	G= Fiberboard
H= Plastic	L= Textile
M= Paper, multi-wall	N= Other Metal
P= Glass, Porcelain, Stoneware	
NUMBER= SUB-CATEGORY OF PACKAGING	
For Drums: 1= Non-removeable Head, 2= Removable Head For Bags: 5M1= Multi-wall bags, 5M2= Multi-walled, water resistant bag	
Any one of the following three styles represents an example of the kind of packaging identification code that may be show on a UN packaging.	
1) There may be a number/letter/number combination indicating a type of packaging and material of construction. For example: 4G= Fiberboard Box                                             2D= Plywood wooden barrel	
2) There may be a number/letter/number combination indicating the type of packaging, material of construction and a subcategory within the type of packaging (See 49CFR part 178.500 for subcategories). For example: 1A1= Non-removable head steel drum     5M2= Multi-walled, water-resistant paper bag	
3) The description may also show a number/letter/letter/number combination. This combination is used when describing a composite packaging. A composite packaging consists of an outer packaging and an inner receptacle, so constructed that they form an integrated single unit. Once assembled, the packaging is filled, stored, shipped, and emptied as one unit. This mark includes the number six indicating a composite type of packaging, two letters, the first indicating the inner receptacle's material and the second letter indicating the outer material and a second number indicating the type of packaging (not a subcategory). An example of a composite packaging identification code may look like this:  6HA1 = Composite packaging consisting of a plastic inner, steel outer, drum 6CD4 = Composite packaging consisting of a natural wood inner, plywood outer, box	

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Appendix B – Completing the Shipper’s Declaration

**SHIPPER'S DECLARATION FOR DANGEROUS GOODS** Print Form

Shipper  Consignee  <i>Two completed and signed copies of this Declaration must be handed to the operator.</i>	Air Waybill No.  Page of Pages Shipper's Reference Number (optional)  <i>For optional use for Company logo name and address</i>  <b>WARNING</b> Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.  Shipment type: (delete non-applicable) <input type="checkbox"/> <del>NON-RADIOACTIVE</del> <input type="checkbox"/> <del>RADIOACTIVE</del>																					
<b>TRANSPORT DETAILS</b> This shipment is within the limitations prescribed for: (delete non-applicable) <input type="checkbox"/> PASSENGER AND CARGO AIRCRAFT <input type="checkbox"/> CARGO AIRCRAFT ONLY Airport of Departure:  Airport of Destination:																						
<b>NATURE AND QUANTITY OF DANGEROUS GOODS</b> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="7">Dangerous Goods Identification</th> </tr> <tr> <th>UN or ID No.</th> <th>Proper Shipping Name</th> <th>Class or Division (Subsidiary Risk)</th> <th>Packing Group</th> <th>Quantity and type of packing</th> <th>Packing Inst.</th> <th>Authorization</th> </tr> </thead> <tbody> <tr> <td style="height: 150px;"> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		Dangerous Goods Identification							UN or ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Packing Group	Quantity and type of packing	Packing Inst.	Authorization							
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UN or ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Packing Group	Quantity and type of packing	Packing Inst.	Authorization																
Additional Handling Information																						
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/placarded, 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  Place and Date  Signature (see warning above)																						

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Shipper's Declaration must be typed and must contain the following:

1. **Shipper:** Enter the full name, address and phone number of the shipper.
2. **Consignee:** Enter the full name, address and phone number of the consignee.
3. **Date:** Enter the date that the Shipper's declaration was given to the carrier.
4. **Responsible Person:** Enter the full name and phone number the responsible person for contact in any emergency.
5. **Air Waybill Number:** Enter the number of the Air Waybill to which the declaration will be attached.
6. **Page...of...Pages:** Enter the page number and the total number of pages or "Page 1 of 1 pages" if there is no extension list.
7. **Aircraft Limitations:** Cross out either "Passenger or Cargo Aircraft" or "Cargo Aircraft Only" to indicate whether the shipment is packed to comply with the limitations.
8. **Airport of Departure:** Enter the full name of the airport or city of departure.
9. **Airport of Destination:** Enter the full name of the airport or city of destination.
10. **Shipment Type:** Cross out Radioactive to indicate that the shipment does not contain radioactive material.
11. **Nature and Quantity of Dangerous Goods:** Enter the following information:
  - Proper Shipping Name supplemented with the technical name (i.e. **Infectious Substances, Affecting Humans (Mycobacterium tuberculosis)**)
  - Class Number and Division Number: **6.2**
  - UN Number: **UN 2814 or UN 2900**
  - Category: **Category A**
  - The net quantity or volume of the dangerous good: **Example 10 mL x 3 all packed in one fibreboard box.**
    - Note: if an overpack is used, indicate this.
  - The number of packaging instructions: **620**
  - The number of packages
  - The words: **Prior arrangements as required by the IATA Dangerous Goods Regulations 1.3.3.1 have been made. Prepared according to IATA/ICAO. I declare that all the applicable air transport requirements have been met. 24 hour Emergency Contact # (xxx)xxx-xxxx.**

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