

SHIPPING OF INFECTIOUS SUBSTANCES

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Biosafety

Objective

- **At the end of this lecture, the students will be able to:**
- Differentiate between infectious substances and biological substance for the purposes of shipping/transportation.
- Describe the types of packaging and documentation appropriate to each.
- Be aware of guidelines and special requirements for dangerous goods transportation.

SHIPPING OF INFECTIOUS SUBSTANCES



Transportation of infectious substances and biological substances

- Regulation on the transport of dangerous Goods
 - UN committee of experts on dangerous Goods, UN Model
- Technical institution for safe transport of dangerous Goods- Air international Civil Aviation organization(ICAO)
- Dangerous Goods regulations – International Air Transport Association (IATA)

SUBSTANCE CATEGORIES


The three proper shipping names for infectious substances are:

 Category A (Infectious Substances)

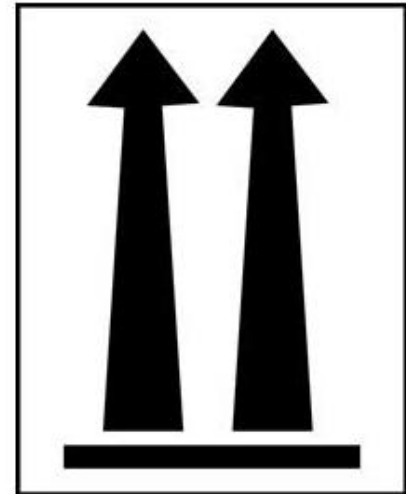
Ebola virus
Bacillus anthracis (culture only)

 Category B (Biological Substances)

Bacillus anthracis (patient specimen)
Highly pathogenic avian influenza virus (patient specimen)

 Exempt

Medical assessment has determined a minimal likelihood that pathogens are present
Pregnancy test
Drug screening



Category A

UN Number: 2814

Category B

UN Number: 3373

Exempt

UN Number:

Examples of infectious substances included in Category A

UN 2814 Infectious substances affecting humans

- *Bacillus anthracis* (cultures only)
- *Brucella abortus* (cultures only)
- *Brucella melitensis* (cultures only)
- *Brucella suis* (cultures only)
- *Burkholderia mallei* [*Pseudomonas mallei* – Glanders] (cultures only)
- *Burkholderia pseudomallei* [*Pseudomonas pseudomallei*] (cultures only)
- *Chlamydia psittaci* [avian strains] (cultures only)
- *Clostridium botulinum* (cultures only)
- *Coccidioides immitis* (cultures only)
- *Coxiella burnetii* (cultures only)
- Crimean-Congo hemorrhagic fever virus
- Dengue virus (cultures only)
- Eastern equine encephalitis virus (cultures only)
- *Escherichia coli*, verotoxigenic (cultures only)
- Ebola virus
- *Francisella tularensis* (cultures only)

TRIPLE PACKING

Primary receptacle

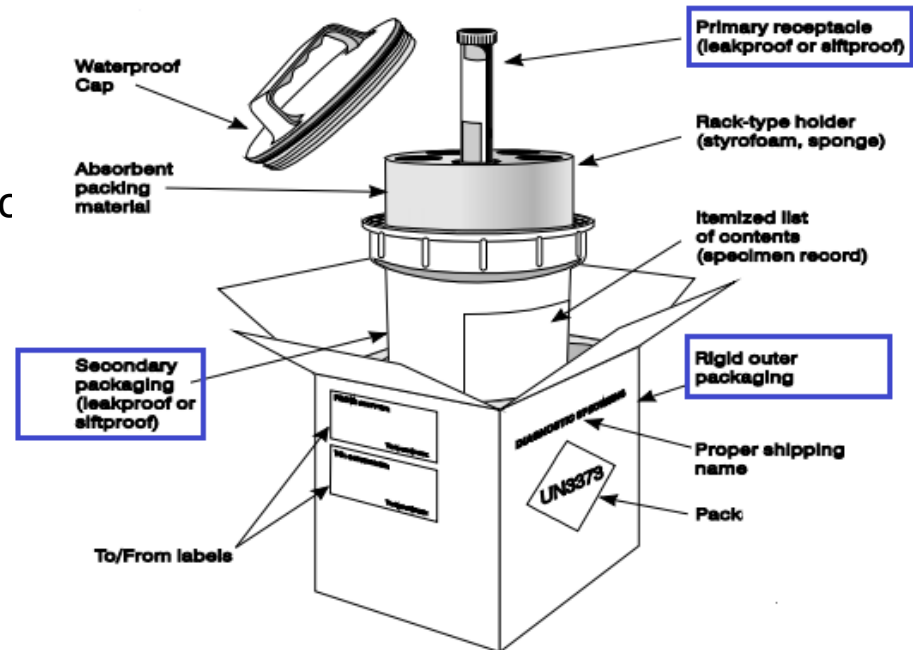
is water tight, leak proof receptacle containing the specimen.
The receptacle is wrapped in enough absorbent material to absorb all fluid in case of breakage.

Secondary receptacle

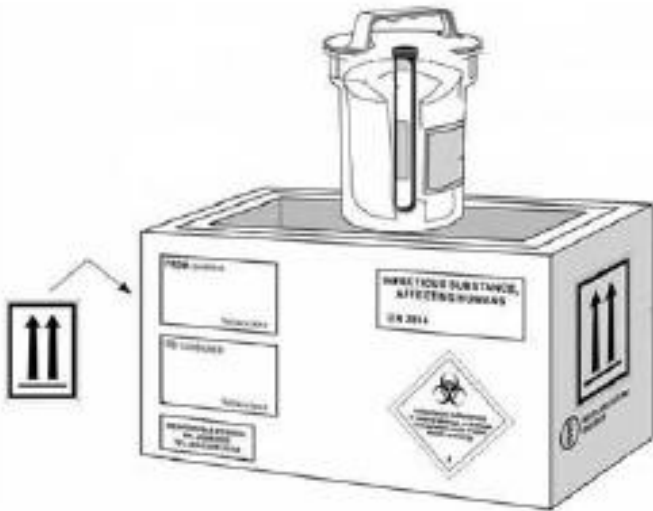
Durable, water tight, leak proof receptacle containing primary receptacle.

Outer shipping package

Rigid, bearing forms, permits,



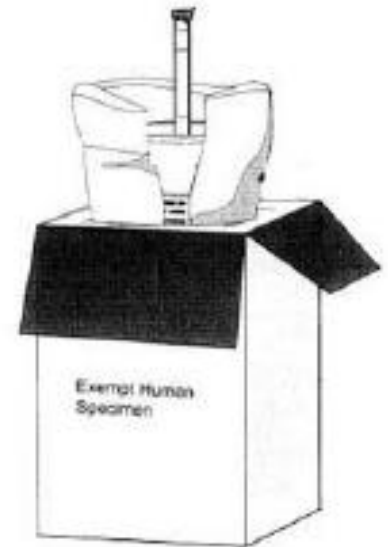
PROPER LABELLING



CATEGORY A



CATEGORY B



EXEMPT

DOCUMENTATION

406 - 0000 0000 406-0000 0000

1 **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13** **14** **15** **16** **17** **18** **19** **20** **21** **22** **23** **24** **25** **26** **27** **28** **29** **30** **31** **32** **33** **34** **35** **36** **37** **38** **39** **40** **41** **42** **43** **44** **45** **46** **47** **48** **49** **50**

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406 - 0000 0000

Air Waybill

SHIPPER'S DECLARATION FOR DANGEROUS GOODS

SHIPPER: _____ TO/THROUGH: _____
 Place of Origin: _____
 Shipper's Reference Number: _____

Commodity: _____

This declaration and signed copies of this Declaration must be attached to the shipment.

TRANSPORT DETAILS

Mode of transport: _____
 Type of transport: _____
 Date of transport: _____
 Place of destination: _____

Signature and quantity of Dangerous Goods:

Dangerous Goods Identification		Quantity	Classification	Proper Shipping Name	Substances
UN No.	Class	Vol	Subst	UN No.	UN No.

Additional shipping information: _____

Signature of Shipper: _____
 Date: _____

Dangerous Goods Declaration

CATEGORY EXERCISE

BATCH :.....GROUP.....

	Situation	Categorization	Proper Shipping Name	UN Number
1-	Patient presents with suspected case of Hepatitis B virus and blood samples are sent.			
2-	Sending a culture of <i>Mycobacterium tuberculosis</i> to a reference laboratory.			
3-	The Ebola virus has been found in bats and samples which have not been cultured are being shipped.			
4-	Medical professional declares human drug test as minimal likelihood for containing pathogens.			