

6 Transport of Specimens to the Laboratory

6.1 International Air Transport Association Dangerous Goods Regulations

Consignors of biological products and diagnostic specimens sent to a laboratory by road, air or sea must comply with the packing regulations set down by the International Air Transport Association (IATA). Failure to package specimens in the recommended manner may result in the person being liable for prosecution if an accident occurs. It is the responsibility of the clinic or hospital to ensure that all personnel involved in the packing and sending of biological specimens are trained to IATA standards. If there are any doubts or concerns please contact the local laboratory to which the specimens are being sent.

All diagnostic specimens should be packaged according to IATA packing instruction 650:

A diagnostic specimen is “Any human or animal material including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids, being transported for diagnostic or investigational purposes.”

The general requirements of IATA packing instruction 650 state that: “Shippers of biological products and diagnostic specimens where a relatively low probability exists that infectious substances are present (diagnostic specimens being transported to undergo routine screening tests or for the purpose of initial diagnosis may be considered to fall under this category) must comply with these regulations. The shipper must also ensure that shipments are prepared in such a manner that they arrive at their destination in good condition and that they present no hazard to persons or animals during shipment”.

Packaging for diagnostic specimens consists of:

- *A leak-proof primary receptacle* - for example, blood collection tube. This must be made of glass, metal or plastic. The maximum quantity within the primary receptacle must not exceed 500 mL. Positive means of ensuring a leak-proof seal, such as heat seal, skirted stopper or metal crimp seal must be provided. If screw caps are used these must be reinforced with adhesive tape. If more than one primary receptacle is placed in a package, they must be wrapped individually to ensure that contact between them is prevented.
- *An absorbent material* – must be placed between the primary receptacle and secondary packaging. This should be sufficient to absorb the entire contents of the package.
- *A watertight secondary packaging* - The secondary packaging must be IATA approved and have undergone testing by the manufacturer to IATA standards. The maximum quantity of diagnostic specimens per package is 4 litres.
- *An itemised list of contents* (packing list) should be placed between the secondary packaging and outer packaging.
- *An outer package* of sufficient strength for its intended use. Polystyrene eskies are not acceptable for transport. The overall size of the completed package must be at least 100 mm in the smallest overall external dimension.
- If the specimens are to be shipped frozen or refrigerated, dry ice or cold bricks should be placed between the secondary packaging and outer packaging. If dry ice is used, the outer packaging must permit the release of carbon-dioxide gas.
- Specimens from outlying facilities need to be specially packaged as per instructions below.

6.2 General Instructions

- Check that the patient details on the request form and specimens match
- Wrap specimens in absorbent cotton wool
- Place all specimens corresponding to each individual request form into a biohazard bag
- Keep request form flat, slide it into the document compartment of the relevant biohazard bag
- All specimens should be packed in an upright position
- Enter patient and specimen details onto packing list
- Pack completed biohazard bags into an IATA compliant secondary container and seal
- Place secondary container into an approved IATA 650 diagnostic shipping container with adequate coolant (ice bricks) if required and restrict movement by padding with an absorbent material, eg. shredded paper
- Place packing list in a biohazard bag and place into shipping container
- Tape outside of packaging to ensure it is sealed and secure, taking care not to cover any regulatory markings
- Mark outside of package with forwarding address and telephone number of receiver and shipper
- Complete and sign consignment note and attach to the outside of the package
- Mark outside of package and the consignment note in 'Description of Goods' box:
 - Diagnostic Specimens
 - Not Restricted
 - Packed in compliance with IATA Packing Instruction 650

6.3 Special Instructions

Specimens for Culture

If specimens for culture are included in an esky with an ice brick they must be insulated from the brick as much as possible. A dramatic reduction in temperature due to ice bricks will significantly decrease the likelihood of recovery of organisms.

Urine, Faeces, Sputum, Swabs etc.

- Urine specimens can be collected into special glass boric acid urine tubes. This will help preserve the urine and prevent leakage during transport
- Screw the lid on tight, wrap each container in cotton wool and fasten with a rubber band
- Place in a plastic bag and tape the bag
- Pack forms **separately** from all specimens in a plastic bag

Be particularly careful with packing as faulty packing may result in leakage creating a significant hazard to the carrier as well as leading to degeneration of the specimens.

Contaminated specimens will be autoclaved on arrival and discarded if they have leaked.

For assistance with packing problems please contact any Pathology Queensland laboratory.

6.4 Cooling Systems

Eskys

Polystyrene eskys are not acceptable for transport. If the esky is old or cracked, please obtain a replacement as soon as possible. The recommended type is Coleman "Little Oscar" or similar.

Ice Bricks

Cold transport of specimens to the laboratory means transporting at approximately 4°C. This is generally achieved by packing in an approved esky containing a frozen ice brick.

Specimens to be shipped frozen or refrigerated in an esky with cold bricks should have the ice brick placed between the secondary packaging and outer packaging. Plasma tubes should be wrapped in foil and taped to the ice brick during transport noting on the ice brick that there are specimens underneath.

Use "Sealed Ice Bricks" or similar contained cool bricks. Do not use ice in plastic bags.

Dry Ice

If the specimens are to be shipped, frozen dry ice should be placed between the secondary packaging and outer packaging. The outer packaging must permit the release of carbon-dioxide gas.

For dry ice, a "Miscellaneous Dangerous Goods" symbol is required on the outside of the package along with the wording: "UN1845 Dry Ice, x kg" (where x = the weight of dry ice included in the package).

Mark "Dry Ice" in the Description of Goods box on the consignment note.