

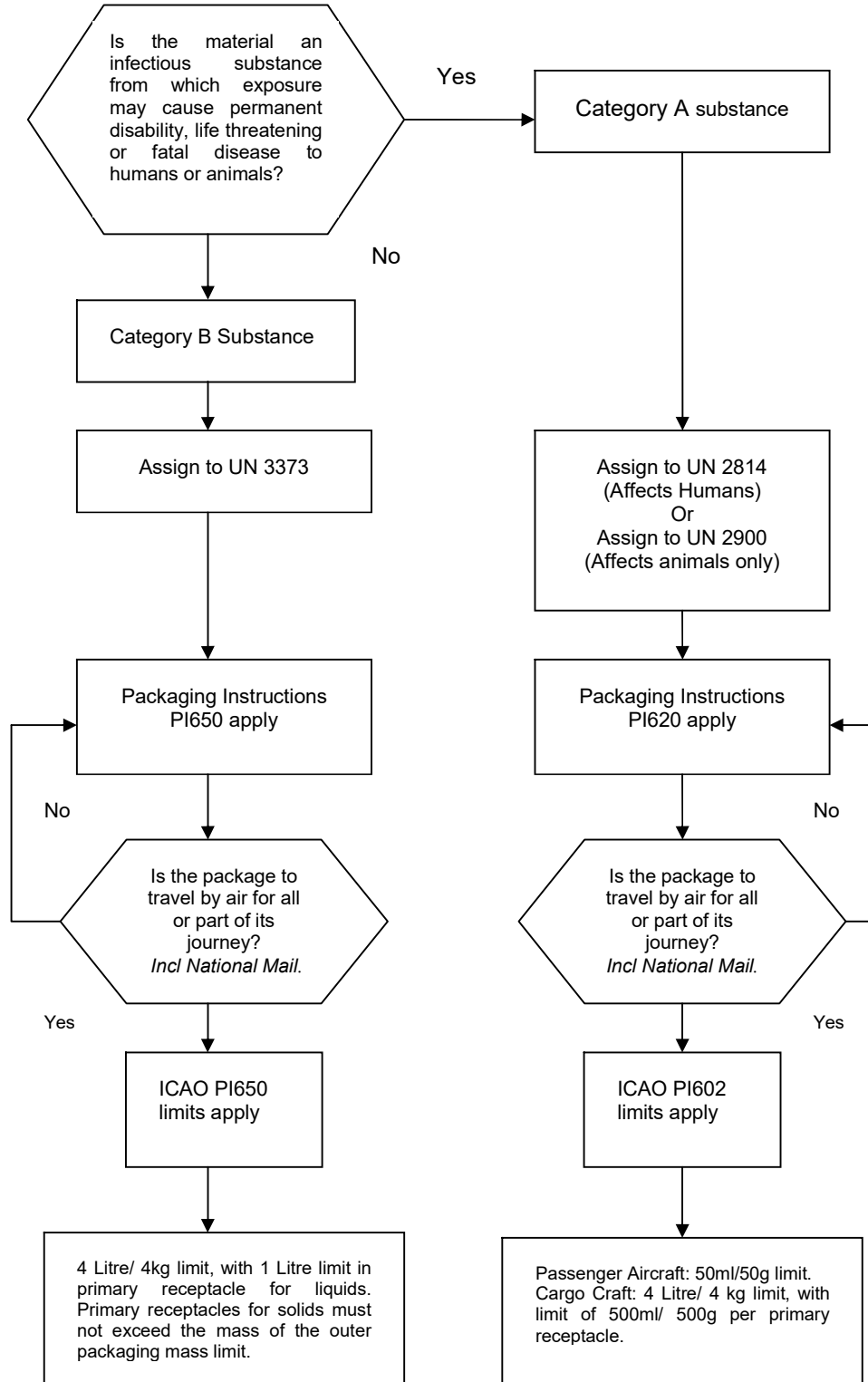
**Packaging Requirements for Sample Transportation**

**Decision Tree**

**Summary of Packing Instruction 650 (PI650) applied to UN3373.**

**Summary of Packing Instruction 650 (PI620) applied to UN2814 & UN2900**

**Decision Tree**



### **Summary of Packing Instruction 650 (PI650) applied to UN3373.**

- **Requirements**
  - The packaging shall be of good quality, strong enough to withstand the shocks and loadings normally encountered during carriage transfer between vehicles or containers or mechanical handling.
  - The packaging shall be constructed and closed to prevent any loss of contents that might be caused under normal conditions of carriage by vibration or by change in temperature, humidity or pressure.
  
- **Components**
  - **Primary Leak-proof Receptacle (*sift proof for solids*) i.e. sample tube or culture vessel**
    - Multiple primary receptacles within a single secondary package must be individually wrapped to prevent contact between them.
    - Primary receptacles or secondary packaging shall be capable of withstanding, without leakage, an internal pressure of 95kPa (0.95 bar).
  
  - **Absorbent Material (e.g. tissue paper or cotton wool)**
    - sufficient to absorb the entire contents of the primary receptacle(s) without compromising the integrity of cushioning material or outer packaging.
  
  - **Secondary Packaging**
    - The nature of secondary packaging is not specified however, to meet the requirements, it should be leak proof to protect the outer packaging should a primary vessel be caused to leak.
  
  - **Cushioning Material**
    - Unspecified cushioning material to secure the secondary packaging within the outer packaging.
  
  - **Outer Packaging**
    - The nature of the outer packaging is not specified, however the smallest external dimension of the outer packaging shall not be less than 100mm. For transport the outer packaging should be marked externally with the symbol shown in Fig. 1 below. This symbol must have a contrasting background colour, be clearly visible and legible. The width of the line shall **at least 2mm** and the numbers & letters **at least 6mm** in height.

**Figure 1. Hazard Label**



- **Completed Package - Drop Test Requirement**
  - The completed package shall be capable of successfully passing a drop test of not less than 1.2m.
  
- **Safety Note**
  - If any substance has leaked or has been split in a vehicle or container, it may not be re-used until after it has been thoroughly cleaned, and, if necessary disinfected or decontaminated. *NB. Any other goods or articles carried in the same container or vehicle shall be examined for possible contamination and treated accordingly.*

## Summary of Packing Instruction 650 (PI620) applied to UN2814 & UN2900

The requirements for PI650 should be satisfied with the following extensions and amendments.

- **Primary Packaging**
  - Inner packagings containing infectious substances shall not be consolidated with inner packagings containing unrelated types of goods.
  - Receptacles consigned at ambient temperature shall be of glass, metal or plastic. Positive means of ensuring a leak-proof seal shall be used, in the case of screw-topped vessels they shall be secured by positive means e.g. tape, paraffin sealing tape or manufactured locking closure.
  - In addition to the pressure tolerance requirements of PI650 primary receptacles should withstand, without leakage temperatures in the range -40°C to +55°C.
- **Secondary Packaging**
  - A leak-proof packaging is specified.
- **List of Contents**
  - An itemised list of contents shall be enclosed between the secondary packaging and the outer packaging. This document should be marked "Infectious Substance, affecting humans..." (and / or animals as appropriate) and show the appropriate UN2814 or UN2900 number.
  - If the infective agent is known its name should be included on this document. If 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 on this document.
- **Outer Packaging**
  - A rigid outer packaging of adequate strength for its capacity, mass and intended use is specified. Its smallest dimension shall not be less than 100mm.
- **Re-use of Packaging**
  - Before an empty packaging is returned to the consignor, or sent elsewhere, it shall be thoroughly disinfected or sterilised and any label or marking indicating that it had contained an infectious substance shall be removed or obliterated.
- **Hazard Labelling**
  - The outer packaging **and** any subsequent over packaging should be marked "Infectious Substance, affecting humans..." (and / or animals as appropriate) and show the appropriate UN2814 or UN2900 number.
  - The outer packaging **and** any subsequent over packaging should be marked with the danger sign for infectious substances (See Fig 2).

Figure 2. Danger sign for Infectious Substances



### Safety Note:

Whatever the nature of the biological agent and its classification, consignors (i.e senders) are responsible for ensuring that packages are prepared in such a manner that they arrive at their destination in good condition and present no hazard to persons or animals during transportation.

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*Derived by Alan Clark from HSE Publication: 'Biological agents: Managing the risks in laboratories and healthcare premises (05/05)' pp50-60. For more details and information about refrigerated / Liquid Nitrogen cooled carriage consult the source document available at <http://www.hse.gov.uk/biosafety/biologagents.pdf>*