



DANGEROUS GOODS PANEL (DGP)
MEETING OF THE WORKING GROUP OF THE WHOLE
Montreal, 18 to 22 April 2005

Agenda Item 5: Discussion of miscellaneous dangerous goods issues

GUIDANCE DOCUMENT — INFECTIOUS SUBSTANCES

(Presented by Judith Code)

1. INTRODUCTION

1.1 This working paper contains a document which provides guidance for complying with the 2005/2006 ICAO TI's.

Guidance Document

Infectious Substances

International Civil Aviation Organization Technical Instructions on the Safe Transport of Dangerous Goods (ICAO TI's), 2005-2006

Note: This guidance document is only valid for the period of 1 January 2005 through 31 December 2006. Appropriate training in accordance with the ICAO TI's is essential to the safe transport of Infectious Substances.

Introduction

The 2005/2006 edition of the ICAO TI's reflects amendments made to the Infectious Substances requirements published in the 13th revised edition of the UN Model Regulations and certain requirements in the 14th revised edition. These requirements were developed in coordination with experts from the World Health Organization (WHO) and other technical experts in the field of transportation, packaging and health.

The purpose of this document is to provide guidance for complying with the 2005/2006 ICAO TI's. Specifically the document provides guidance on:

- C Definitions
- C Classification
- C Exemptions
- C Exempt Human/Animal Specimens
- C Prohibitions
- C Packaging Provisions
- C Passenger Provisions
- C Training and Emergency response procedures

Definitions

Infectious substances are substances which are known to contain, or are reasonably expected to contain, pathogens. Pathogens are defined as micro-organisms (including bacteria, viruses, rickettsiae, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

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

Patient specimens are human or animal materials, 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.

Classification

Risk groups were removed from the ICAO TI's in the 2005/ 2006 edition and replaced with Category A and Category B Infectious Substances.

Category A Infectious Substances are Infectious Substances in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals. They are assigned the following proper shipping name and UN number:

- C **Infectious Substance affecting humans**', UN 2814 or
- C **Infectious Substances affecting animals *only***', UN 2900.

Assignments to UN 2814 or UN 2900 are to be based on the known medical history and symptoms of the source human or animal, endemic local conditions, or professional judgement concerning individual circumstances of the source human or animal. If there is any doubt as to whether or not a pathogen falls within this category it must be transported as a Category A Infectious Substance.

Category B Infectious Substances are Infectious Substances that don't meet the criteria for inclusion in Category A. They are assigned the following proper shipping names and UN number UN 3373:

- C **Diagnostic Specimen***,
- C **Clinical Specimen***, or
- C **Biological Substance, Category B.**

* From January 1, 2007 it is anticipated the use of the shipping names 'Diagnostic Specimens' and 'Clinical Specimens' will no longer be permitted.

Note: To assist in the assignment of an Infectious Substance into Category A see the Indicative List provided in Table 2-10 in the 2005/2006 ICAO TI's. That list is not exhaustive. Infectious substances, including new or emerging pathogens, which do not appear in the table but which meet the same criteria shall be assigned to Category A. In addition, if there is doubt as to whether or not a substance meets the criteria it shall be included in Category A.

Exemptions

- C Substances, which do not contain infectious substances, or substances, which are unlikely to cause disease in humans or animals, are not subject to these Instructions unless they meet the criteria for inclusion in another class.
- C Dried blood spots, collected by applying a drop of blood onto absorbent material, or faecal occult blood screening tests and 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 and any tissues or organs intended for use in transplantation are not subject to these Instructions.
- C Substances for which there is a low probability that infectious substances are present, or where the concentration is at a level naturally encountered, are not subject to these Instructions. Examples are: foodstuffs, water samples, living persons and substances that have been treated so that the pathogens have been neutralized or deactivated so that they no longer pose a health risk.

Exempt Human/Animal Specimens

Human or animal specimens for which there is minimal likelihood that pathogens are present are not subject to the ICAO Technical Instructions. However, to ensure their safe transport it is recommended these specimens be transported in a packaging that consists of three components:

- (i) a leak-proof primary receptacle(s);
- (ii) a leak-proof secondary packaging; and
- (iii) an outer packaging of adequate strength for its capacity, mass and intended use, and with at least one surface having minimum dimensions of 100 mm × 100 mm;

For liquids, absorbent material in sufficient quantity to absorb the entire contents should 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;

When multiple fragile primary receptacles are placed in a single secondary packaging, they should be either individually wrapped or separated to prevent contact between them.

If such a packaging is used it should be marked "Exempt human specimen" or "Exempt animal specimen", as appropriate.

NOTE: An element of professional judgment is required to determine if a substance is exempt under this paragraph. 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 paragraph include the blood or urine tests to monitor cholesterol levels, blood glucose levels, hormone levels, or prostate specific antibodies (PSA); those required to monitor organ function such as heart, liver or kidney function for humans or animals with non-infectious diseases, or therapeutic drug monitoring; those conducted for insurance or employment purposes and are intended to determine the presence of drugs or alcohol; pregnancy test; biopsies to detect cancer; and antibody detection in humans or animals.

Prohibitions

A live animal that has been intentionally infected and is known or suspected to contain an infectious substance must not be transported by air unless the infectious substance contained cannot be consigned by any other means. Infected animals may only be transported under terms and conditions approved by the appropriate national authority.

Packaging Provisions

Packing Instruction 602 in the 2005/2006 ICAO TI's specifies the type of packaging required for all Category A Infectious Substances. All other applicable provisions of the ICAO TI's apply (See Annex 2 for a graphic depiction of a Category A package).

Packing Instruction 650 in the 2005/2006 ICAO TI's provides all the information necessary to prepare and transport Category B Infectious Substances (See Annex 3 for a graphic depiction of a Category B package).

Passenger Provisions

Category A or B Infectious Substances are not permitted for transport in carry-on or checked baggage and must not be carried on a person.

Training and Emergency Response

Effective employee training in accordance with Part 6 of the TDGR and Chapter 4 of Part 1 of the ICAO TI's appropriate emergency response procedures significantly minimize the risk of exposure and subsequent transmission of infection or disease.

Mitigation procedure:

DO NOT CLEAN-UP OR DISPOSE OF INFECTIOUS SUBSTANCES, EXCEPT UNDER SUPERVISION OF A SPECIALIST.

- C Isolate spill or leak area immediately in all directions.
- C Keep unauthorized personnel away.
- C Obtain identity of substance involved if possible and report the spill to the appropriate authorities.
- C Do not touch or walk through spilled material.
- C Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- C Be particularly careful to avoid contact with broken glass or sharp objects that may cause cuts or abrasions that could significantly increase the risk of exposure.
- C Damaged packages containing solid CO₂ as a refrigerant may produce water or frost from condensation of air. Do not touch this liquid as it could be contaminated by the contents of the parcel.
- C Liquid nitrogen may be present and can cause severe burns.
- C Absorb spilled materials with earth, sand or other non-combustible material while avoiding direct contact.
- C Cover damaged package or spilled material with damp towel or rag and keep wet with liquid bleach or other disinfectant. Liquid bleach will generally effectively inactivate the released substance.

First Aid:

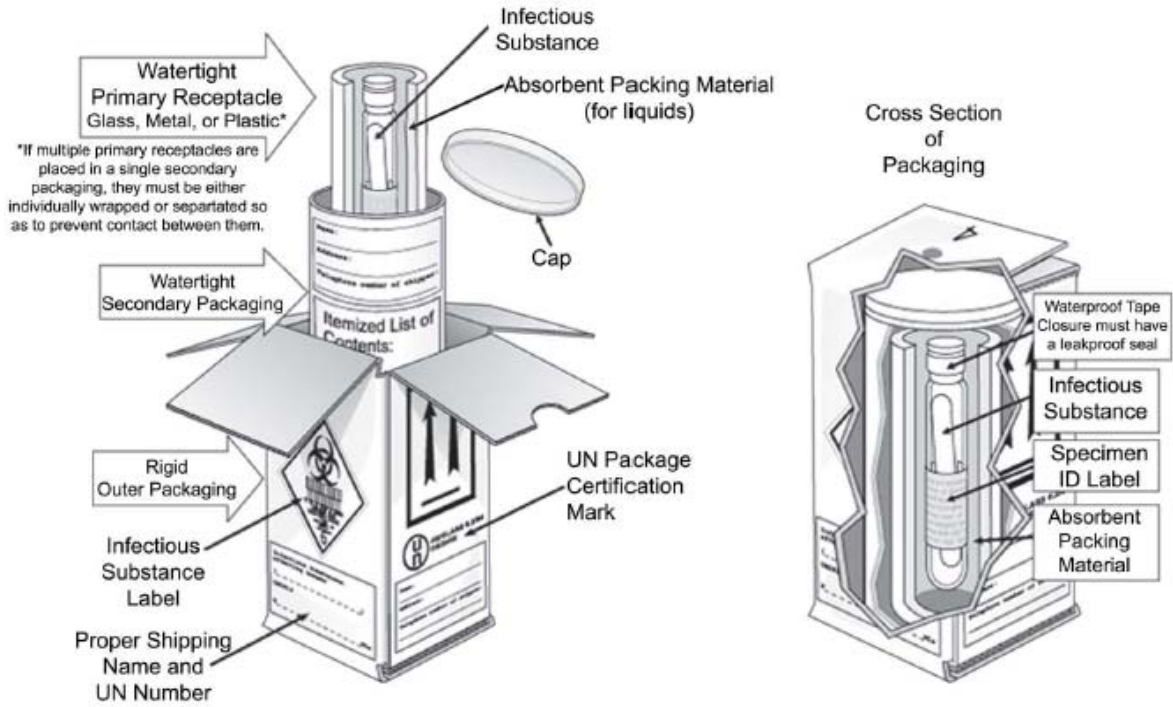
- C Move exposed person(s) to a safe isolated area.

CAUTION: Exposed person(s) may be a source of contamination.

- C Call emergency medical services.
- C Remove and isolate contaminated clothing and shoes.
- C In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- C Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- C For further assistance, contact the appropriate public health authority.
- C Ensure that medical personnel are aware of the substances involved, and take precautions to protect themselves.

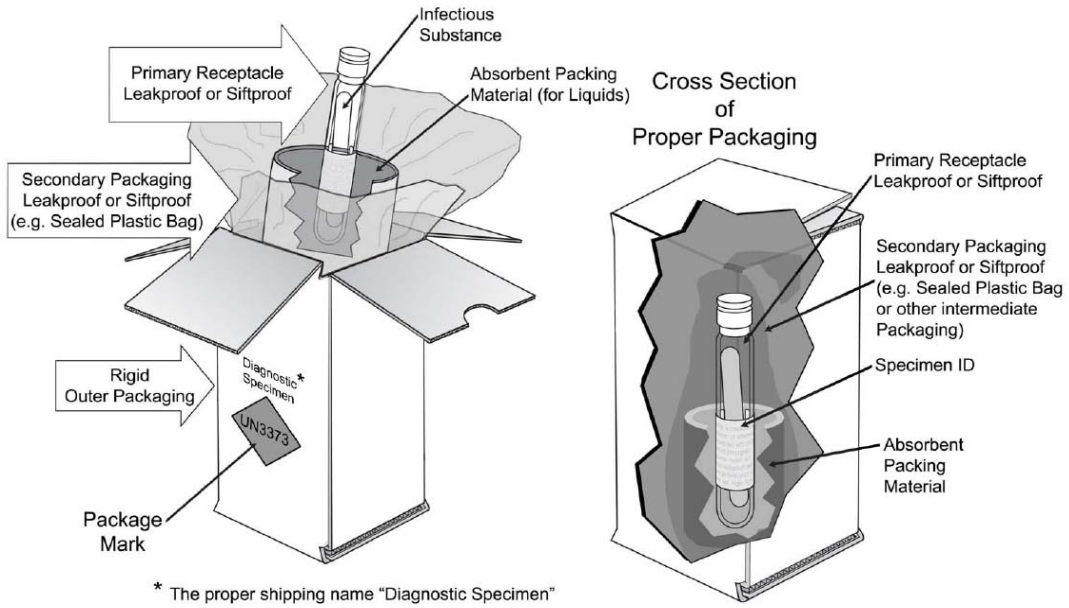
Annex 1

Packing and Labeling of Category A Infectious Substances



Annex 2

Packing and Labeling of Category B Infectious Substances



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