

STATE VARIATIONS: AUG-03, BHG-02, CAG-05/10/11, DQG-03, GBG-05, VCG-04, VUG-02

OPERATOR VARIATIONS: 4C-04, 4M-04, AF-02, AM-06/10, AS-08, BR-14, BZ-07, CA-11, FX-09, HA-03, IJ-06, IP-03, JJ-04, KC-08, L7-04, LA-14, LP-04, LU-04, M3-04, M7-04, MS-06, OU-12, SV-12, TK-07, UC-04, UU-05, XL-04.

This instruction applies to UN 2814 and UN 2900.

Packaging must meet the requirements of 6.5 and must be marked as required by 6.5.3.1.

## General Requirements

Shippers of infectious substances must comply with these Regulations and must ensure 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 transport.

The packagings must include:

- (a) **inner packagings**, comprising of:
- leakproof primary receptacle(s);
  - a leakproof secondary packaging;
  - other than for solid infectious substances, absorbent material, such as cotton wool, in sufficient quantity to absorb the entire contents placed between the primary receptacle(s) and the secondary packaging; if multiple fragile primary receptacles are placed in a single secondary packaging, they must be either individually wrapped or separated so as to prevent contact between them;
- (b) an **itemized list of contents**, enclosed between the secondary packaging and the outer packaging; and
- (c) a **rigid outer packaging**. The smallest external dimension must be not less than 100mm (4in).

Alternative packagings for the transport of animal material may be authorized by the competent authority in accordance with the provisions in 5.0.6.7.

Whatever the intended temperature of the consignment, the primary receptacle or the secondary packaging must be capable of withstanding, without leakage, an internal pressure producing a pressure differential of not less than 95 kPa (0.95 bar) and temperatures in the range of -40°C to 55°C (-40°F to 130°F).

### Note:

*The capability of a packaging to withstand an internal pressure without leakage that produces the specified pressure differential should be determined by testing samples of primary receptacles or secondary packagings. Pressure differential is the difference between the pressure exerted on the inside of the receptacle or packaging and the pressure on the outside. The appropriate test method should be selected based on receptacle or packaging type. Acceptable test methods include any method that produces the required pressure differential between the inside and outside of a primary receptacle or a secondary packaging. The test may be conducted using internal hydraulic or pneumatic pressure (gauge) or external vacuum test methods. Internal hydraulic or pneumatic pressure can be applied in most cases as the required pressure differential can be achieved under most circumstances. An external vacuum test is not acceptable if the specified pressure differential is not achieved and maintained. The external vacuum test is a generally acceptable method for rigid receptacles and packagings but is not normally acceptable for:*

- flexible receptacles and flexible packagings;
- receptacles and packagings filled and closed under an absolute atmospheric pressure lower than 95kPa.

## Additional Requirements

Inner packagings containing infectious substances must not be consolidated with inner packagings containing unrelated types of goods. Complete packages may be overpacked in accordance with the provisions of 5.0.1.5.

Other dangerous goods must not be packed in the same packaging as Division 6.2 Infectious Substances unless they are necessary for maintaining the viability, stabilizing or preventing degradation or neutralizing the hazards of the infectious substances. A quantity of 30 ml or less of dangerous goods included in Classes 3, 8, or 9 may be packed in each primary receptacle containing infectious substances provided these substances meet the requirements of 2.6. When these small quantities of dangerous goods are packed with infectious substances in accordance with this packing instruction, no other requirements in these Regulations need be met.

When the infectious substances to be transported are unknown, but suspected of meeting the criteria for inclusion in Category A, the words "Suspected Category A Infectious Substance" must be shown in parentheses following the proper shipping name on the itemized list of contents inside the outer packaging.

All packages containing infectious substances must be marked durably and legibly on the outside of the package with the NAME and TELEPHONE NUMBER OF A PERSON RESPONSIBLE.

## Specific Requirements

Other than for exceptional consignments, for example, large body parts and whole organs, which require special packaging, the following specific requirements apply:

*Substances consigned at ambient or higher temperatures:* Primary receptacles must be of glass, metal or plastic. Positive means of ensuring a leak-proof seal must be provided, such as heat seal, skirted stopper or metal crimp seal. If screw caps are used, these must be secured by positive means, e.g., tape, paraffin sealing tape or manufactured locking closure.

*Substances consigned refrigerated or frozen (wet ice, prefrozen packs, Carbon dioxide, solid [dry ice]):* Ice, Carbon dioxide, solid (dry ice) or other refrigerant must be placed around the secondary packaging(s) or alternatively in an overpack with one or more complete packages marked in accordance with 6.5.3.1. Interior support must be provided to secure the secondary packaging(s) or packages in the original position after the ice or Carbon dioxide, solid (dry ice) has dissipated. If ice is used, the outer packaging or overpack must be leak-proof. If Carbon dioxide, solid (dry ice) is used, the outer packaging or overpack must permit the release of carbon-dioxide gas. The primary receptacle and the secondary packaging must maintain their integrity at the temperature of the refrigerant used.

*Substances consigned in liquid nitrogen:* Plastic primary receptacles capable of withstanding very low temperatures must be used. The secondary packaging must 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 must also be fulfilled. The primary receptacle and secondary packaging must maintain their integrity at the temperature of the refrigerant used.

*Lyophilized substances:* Primary receptacles must be either flame-sealed glass ampoules or rubber-stoppered glass vials fitted with metal seals.

Before an empty packaging is returned to the consignor, or sent elsewhere, it must be disinfected or sterilized to nullify any hazard and any label or marking indicating that it contained an infectious substance must be removed or obliterated.

## Reference

International Air Transport Association's (IATA) Dangerous Goods Regulations (DGR), 56<sup>th</sup> Edition, 2015.