

PACKING INSTRUCTION Y645

STATE VARIATION: USG-04

OPERATOR VARIATIONS: 5X-02, AA-01, AM-06, AS-02, BW-01, DE-01, FX-02, GA-03, GF-04, HA-01, JU-06, KC-11, KE-07, KQ-08, LA-06, LH-01, LX-02, LY-04, MH-14, OM-08, OS-03, OU-04, PX-10, SW-02, TN-04, UA-02, UX-02, VO-03, VT-01, WY-04, XG-01, XK-03, XQ-01

This instruction applies to Limited Quantities of Division 6.1 solids in Packing Group III.

The General Packing Requirements of Subsections 2.7.5, 5.0.2 to 5.0.4 (with the exception of 5.0.2.3, 5.0.2.5, 5.0.2.11 and 5.0.2.14.2) must be met except that the packagings do not have to meet the marking and testing requirements of 6.0.4 and Subsection 6.3. Packagings must meet the construction criteria specified in Subsections 6.1 and 6.2 and the test criteria specified in Subsection 6.6.

Compatibility Requirements

- substances must be compatible with their packagings as required by 5.0.2.6;
- metal packagings must be corrosion resistant or with protection against corrosion for substances with a Class 8 subsidiary risk.

Closure Requirements

- closures must meet the requirements of 5.0.2.7.

Limited Quantity Requirements

The requirements of Subsection 2.7 must be met including:

- the capability of the package to pass a drop test of 1.2 m;
- a 24 hour stacking test;
- the gross weight of the completed package must not exceed 30 kg.

Single packagings are not permitted.

COMBINATION PACKAGINGS		
Inner Packaging (see 6.1)	Net quantity per inner packaging	Total net quantity per package
Fibre	1.0 kg	10.0 kg
Glass	1.0 kg	
Metal	1.0 kg	
Paper bag	1.0 kg	
Plastic	1.0 kg	
Plastic bag	1.0 kg	

OUTER PACKAGINGS																	
Type	Drums						Jerricans			Boxes							
Desc.	Steel	Alu-minium	Ply-wood	Fibre	Plastic	Other metal	Steel	Alu-minium	Plastic	Steel	Alu-minium	Wood	Ply-wood	Reconstituted wood	Fibre-board	Plastic	Other metal

PACKING INSTRUCTION 650

STATE VARIATIONS: BHG-02, CAG-05, DQG-03, GBG-05, GHG-02, IDG-02, VCG-04

OPERATOR VARIATIONS: 4C-04, 4M-04, AM-06/10, AR-02, AS-08, BR-14, BZ-07, CM-05, E9-03, FX-04, G3-02, GH-02, IP-03, JJ-04, KC-08, KE-06, L7-04, LA-07, LH-05, LP-04, LU-04, M3-04, M7-04, MN-03/10, MS-06, OS-05, OU-12, PX-08, S7-02, SQ-10, SV-12, TN-05, TZ-05, UC-04, UU-05, XG-05, XL-04, XQ-05

This instruction applies to UN 3373 on passenger and cargo aircraft and Cargo Aircraft Only.

General Requirements

The packagings must be of good quality, strong enough to withstand the shocks and loadings normally encountered during transport, including trans-shipment between transport units and between transport units and warehouses as well as any removal from a pallet or overpack for subsequent manual or mechanical handling. Packagings must be constructed and closed so as to prevent any loss of contents that might be caused under normal conditions of transport, by vibration, or by changes in temperature, humidity or pressure.

PACKING INSTRUCTION 650 *(continued)*

The packaging must consist of three components:

- (a) a primary receptacle(s);
- (b) a secondary packaging; and
- (c) a rigid outer packaging.

Primary receptacles must be packed in secondary packagings in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents into the secondary packaging. Secondary packagings must be secured in outer packagings with suitable cushioning material. Any leakage of the contents must not compromise the integrity of the cushioning material or of the outer packaging.

Packages must be prepared as follows:

(a) For liquid substances:

1. The primary receptacle(s) must be leakproof and must not contain more than 1 L;
2. The secondary packaging must be leakproof;
3. If multiple fragile primary receptacles are placed in a single secondary packaging, they must be either individually wrapped or separated to prevent contact between them;
4. Absorbent material must be placed between the primary receptacle and the secondary packaging. The absorbent material, such as cotton wool, must be in sufficient quantity to absorb the entire contents of the primary receptacle(s) so that any release of the liquid substance will not compromise the integrity of the cushioning material or of the outer packaging;
5. The primary receptacle or the secondary packaging must be capable of withstanding, without leakage, an internal pressure of 95 kPa in the range of -40°C to 55°C.
6. The outer packaging must not contain more than 4 L. This quantity excludes ice, dry ice or liquid nitrogen when used to keep specimens cold.

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 a absolute atmospheric pressure lower than 95 kPa.

(b) For solid substances:

1. The primary receptacle(s) must be siftproof and must not exceed the outer packaging weight limit;
2. The secondary packaging must be siftproof;
3. If multiple fragile primary receptacles are placed in a single secondary packaging, they must be either individually wrapped or separated to prevent contact between them;
4. Except for packages containing body parts, organs or whole bodies, the outer packaging must not contain more than 4 kg. This quantity excludes ice, dry ice or liquid nitrogen when used to keep specimens cold;
5. If there is any doubt as to whether or not residual liquid may be present in the primary receptacle during transport then a packaging suitable for liquids, including absorbent materials, must be used.

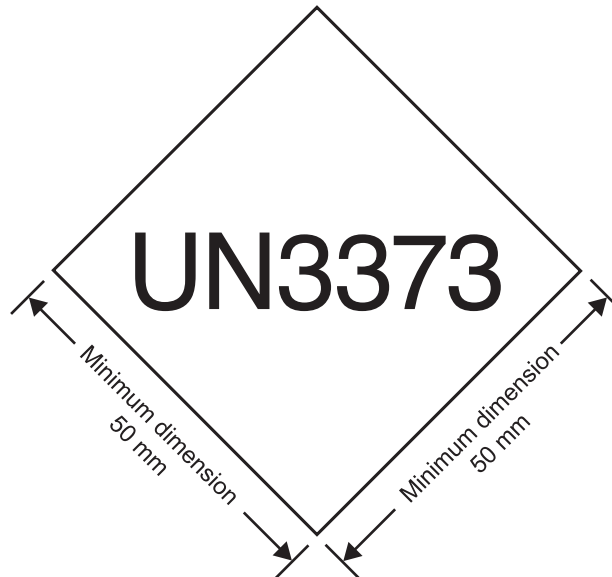
An itemized list of contents must be enclosed between the secondary packaging and the outer packaging.

At least one surface of the outer packaging must have a minimum dimension of 100 mm × 100 mm.

The completed package must be capable of successfully passing the drop test described in 6.5.4.4 as specified in 6.5.4.2 except that the height of the drop must not be less than 1.2 m. Following the appropriate drop sequence, there must be no leakage from the primary receptacle(s) which must remain protected by absorbent material, when required, in the secondary packaging.

PACKING INSTRUCTION 650 *(continued)*

For transport, the mark illustrated below must be displayed on the external surface of the outer packaging on a background of a contrasting colour and must be clearly visible and legible. The mark must be in the form of a square set at an angle of 45° (diamond-shaped) with each side having a length of at least 50 mm, the width of the line must be at least 2 mm and the letters and numbers must be at least 6 mm high. The proper shipping name “Biological Substance, Category B” in letters at least 6 mm high must be marked on the outer packaging adjacent to the diamond-shaped mark.



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Unless all package marks are clearly visible, the following conditions apply when packages are placed in an overpack:

- the overpack must be marked with the word “Overpack”; and
- the package marks must be reproduced on the outside of the overpack.

A Shipper's Declaration for Dangerous Goods is not required.

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.

Specific Requirements

Refrigerated or frozen specimens: Ice, dry ice and liquid nitrogen:

- When dry ice or liquid nitrogen is used to keep specimens cold, all applicable requirements of these Regulations must be met. When used, ice or dry ice must be placed outside the secondary packagings or in the outer packaging or an overpack. Interior supports must be provided to secure the secondary packagings in the original position after the ice or dry ice has dissipated. If ice is used, the outside packaging or overpack must be leakproof. If dry ice is used, the packaging must be designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packagings.
- The primary receptacle and the secondary packaging must maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures, which could result if refrigeration were to be lost.

Infectious substances assigned to UN 3373 which are packed and marked in accordance with this packing instruction are not subject to any other requirement of these Regulations except for the following:

- (a) the name and address of the shipper and of the consignee must be provided on each package;
- (b) the name and telephone number of a person responsible must be provided on the air waybill or on the package;
- (c) the classification must be in accordance to 3.6.2;
- (d) the incident reporting requirements in 9.6.1 must be met; and
- (e) the inspection for damage or leakage requirements in 9.4.1 and 9.4.2.

Note:

When the shipper or consignee is also the 'person responsible' as referred to in b) above, the name and address need be marked only once in order to satisfy the name and address marking provisions in both a) and b), above.

Passengers and crew members are prohibited from transporting infectious substances as or in carry-on baggage, checked baggage or on their person.

PACKING INSTRUCTION 650 *(continued)*

If an Air Waybill is used, the “Nature and Quantity of Goods” box must show “UN 3373”, the text “BIOLOGICAL SUBSTANCE, CATEGORY B” and the number of packages.

Clear instructions on filling and closing such packages must be provided by packaging manufacturers and subsequent distributors to the shipper or to the person who prepares the package (e.g. patient) to enable the package to be correctly prepared for transport.

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.

PACKING INSTRUCTION 651

OPERATOR VARIATIONS: 5X-02, AA-01, AM-06, AS-02, BR-02, BW-01, CA-11, CX-02, FX-02, HA-01, JJ-07, JL-08, KA-02, KZ-07, LA-06, LD-02/06, LY-04, OM-12, TU-09, UA-02, UU-02, UX-04, VN-04

This instruction applies to Division 6.1 liquids with a Class 8 subsidiary risk in Packing Group I on passenger aircraft.

The General Packing Requirements of 5.0.2 must be met.

Compatibility Requirements

- substances must be compatible with their packagings as required by 5.0.2.6;
- metal packagings must be corrosion resistant or with protection against corrosion.

Closure Requirements

- closures must meet the requirements of 5.0.2.7.

Additional Packing Requirements

- inner packagings must be packed with sufficient absorbent material to absorb the entire contents of the inner packagings and placed in a rigid leakproof receptacle before packing in outer packagings.

Single packagings are not permitted.

COMBINATION PACKAGINGS		
Inner Packaging (see 6.1)	Net quantity per inner packaging	Total net quantity per package
Glass	0.5 L	0.5 L
Metal	0.5 L	
Plastic	0.5 L	

OUTER PACKAGINGS

Type	Drums						Jerricans			Boxes							
Desc.	Steel	Alu- minium	Ply- wood	Fibre	Plastic	Other metal	Steel	Alu- minium	Plastic	Steel	Alu- minium	Wood	Ply- wood	Recon- stituted wood	Fibre- board	Plastic	Other metal
Spec.	1A1 1A2	1B1 1B2	1D	1G	1H1 1H2	1N1 1N2	3A1 3A2	3B1 3B2	3H1 3H2	4A	4B	4C1 4C2	4D	4F	4G	4H1 4H2	4N

PACKING INSTRUCTION 652

STATE VARIATION: USG-04

OPERATOR VARIATIONS: 4C-03, 4M-03, 5X-02, AA-01, AM-06, AS-02, BR-02, BW-01, CA-11, CX-02, FX-02, HA-01, JJ-03, JL-08, KA-02, KZ-07, L7-03, LA-06, LD-02, LP-03, LU-03, LY-04, M3-03, M7-03, OM-12, TU-09, UA-02, UC-03, UU-02, UX-04, VN-04, XL-03

This instruction applies to Division 6.1 liquids in Packing Group I on passenger aircraft.