



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-THIRD MEETING

Montréal, 11 to 21 October 2011

Agenda Item 2: Development of recommendations for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2013-2014 Edition

DRAFT AMENDMENTS OF THE TECHNICAL INSTRUCTIONS TO ALIGN TO THE UN RECOMMENDATIONS — PART 4

(Presented by the Secretary)

SUMMARY

This working paper contains draft amendments to Part 4 of the Technical Instructions to reflect the decisions taken by the UN Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals at its fifth session (Geneva, 10 December 2010). It also reflects amendments agreed by DGP-WG/10 (Abu Dhabi, United Arab Emirates, 7 to 11 November 2010) and DGP-WG/11 (Atlantic City, United States, 4 to 8 April 2011).

The DGP is invited to agree to the draft amendments in this working paper.

Part 4

PACKING INSTRUCTIONS

INTRODUCTORY NOTES

DGP/23-WP/2, paragraph 3.2.16:

[Note 1.— Packing groups

For packing purposes, dangerous goods ~~of all classes~~ other than Classes 1, 2 and 7, self-reactive substances of Division 4.1, and Divisions 5.2 and 6.2, have been divided among three packing groups according to the degree of danger they present. The packing groups have the following meanings:

of classes 3, 8, 9 and divisions

Packing Group I — Substances presenting high danger

Packing Group II — Substances presenting medium danger
 Packing Group III — Substances presenting low danger

Some substances in Class 9 and liquids in Division 5.1 have been assigned to packing groups by experience rather than through application of technical criteria. The packing group to which a substance is assigned is listed in Table 3-1. The criteria for the packing groups are given in Part 2, Chapters 3, 4, 5, 6 and 8.

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DGP/23-WP/3, paragraph 3.2.26:

Note 7.— Carriage of oxygen and air with aquatic animals

With the approval of the appropriate authority of the State of Origin, of Destination and of the Operator, for the purpose of providing life support to aquatic animals during transport, ~~a~~ cylinders containing Oxygen compressed, UN 1072 or Air, compressed, UN 1002 may be carried to oxygenate the water in accordance with the provisions of Table S-3-1 and Special Provision A202 (which appear in the Supplement).

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DGP/23-WP/2, paragraph 3.2.19:

1.1.4 The body and the closure of any packaging must be so constructed as to be able to adequately resist the effects of temperature and vibration occurring in normal conditions of transport. The closure device must be so designed that it:

- a) is unlikely that it can be incorrectly or incompletely closed, and must be such that it may be checked easily to determine that it is completely closed; and
- b) remains securely closed during transport.

1.1.4.1 In addition, for inner packagings containing liquids ~~substances~~, closures must be held securely, tightly and effectively in place by secondary means. Examples of such methods include: adhesive tape, friction sleeves, welding or soldering, positive locking wires, locking rings, induction heat seals and child-resistant closures. When secondary means of closure cannot be applied to an inner packaging containing liquids, the inner packaging must be securely closed and placed in a leakproof liner and then placed in an outer packaging.

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DGP/23-WP/3, paragraph 3.2.12:

1.1.9 Subject to 1.1.8 an outer packaging may contain more than one item of dangerous goods provided that:

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- e) the quantities of different dangerous goods contained in one outer packaging must be such that "Q" does not exceed the value of 1, where "Q" is calculated using the formula:

$$Q = \frac{n_1}{M_1} + \frac{n_2}{M_2} + \frac{n_3}{M_3} + \dots$$

where n_1 , n_2 , etc. are the net quantities of the different dangerous goods and M_1 , M_2 , etc. are the maximum net quantities for these different dangerous goods according to Table 3-1 for passenger or cargo aircraft as applicable. However, the following dangerous goods do not need to be taken into account in the calculation of the "Q" value:

- 1) carbon dioxide, solid (dry ice), UN 1845;
- 2) those where columns 11 and 13 of Table 3-1 indicate "No limit";
- 3) those with the same UN number, packing group, and physical state (i.e. solid or liquid), providing they are the only dangerous goods in the package and the total net quantity does not exceed the maximum net quantity according to Table 3-1.

- ~~4) those where columns 11 and 13 of Table 3-1 indicate a maximum gross mass per package.~~
- ~~f) for packages containing dangerous goods where the letter "G" follows the quantity shown in column 11 or 13 of Table 3-1, the gross mass of the completed package does not exceed the lowest applicable gross mass.~~

An outer packaging containing Division 6.2 (Infectious Substances) may contain material for refrigeration, or freezing or packaging material such as absorbent material.

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DGP/23-WP/3, paragraph 3.2.28:

1.1.10 Inner packagings must be so packed, secured or cushioned in an outer packaging in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents into the outer packaging. Inner packagings containing liquids must be packaged with their closures upward and placed within outer packagings consistent with the orientation markings prescribed in ~~5:3.2.11 b)~~ 5:3.2.12 b) of these Instructions. Inner packagings that are liable to break or be punctured easily, such as those made of glass, porcelain or stoneware or of certain plastic material, must be secured in outer packagings with suitable cushioning material. Any leakage of the contents must not substantially impair the protective properties of the cushioning material or of the outer packaging.

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Editorial Note.— Editorial amendments are proposed in the following paragraph in addition to amendments proposed to align with the UN. Proposed editorial amendments are:

- 1) moving the exceptions into a new paragraph 1.1.13.1 (for the sake of clarity);
- 2) making the quantity exception language consistent (e.g. current text includes “inner packagings of 120 ML or less”, “not exceeding 50 ml”, “each containing not more than 500 mL”. Proposed amendment would align with the UN by using “each containing not more than” consistently.

1.1.13 Except as provided in 1.1.13.1, Combination packagings having inner packagings containing liquid dangerous goods, excluding flammable liquids in inner packagings of 120 mL or less, or infectious substances in primary receptacles not exceeding 50 mL, or hermetically sealed inner packagings each containing not more than 500 mL, must be packed so that the closures on the inner packagings are upward and the upright position of the package must be indicated on it by the “Package orientation” label described in 5:3.2.12 b). The words “This side up” or “This end up” may also be displayed on the top cover of the package.

1.1.13.1 Orientation arrows are not required on:

- a) outer packagings containing dangerous goods in inner packagings each containing not more than 120 mL with sufficient absorbent material between the inner and outer packagings to completely absorb the liquid contents;
- b) outer packagings containing Division 6.2 infectious substances in primary receptacles each containing not more than 50 mL; or
- c) outer packagings containing dangerous goods in hermetically sealed inner packagings each containing not more than 500 mL

The amendment to 1.1.13 proposed in DGP-WP/23-WP/3 was incorporated in the 2011-2012 Edition through Addendum No. 3, Corrigendum No. 2

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Editorial Note.— The following new text was accidentally omitted at DGP-WG/11.

1.1.21 Where ice is used as a coolant it must not affect the integrity of the packaging.

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Chapter 2

GENERAL

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2.3 Each instruction shows, where applicable, the acceptable single and combination packagings. For combination packagings, tables show the acceptable outer packagings and associated inner packagings with the maximum net quantity permitted in each inner packaging. Where provisions for particular articles or substances apply, a table shows the inner packagings with associated quantity limitations, the permitted quantity per package and, where applicable, an indication if single packagings are permitted. Where appropriate, additional packing requirements are also indicated at the end of a packing instruction. These additional packing requirements may impose a higher standard of packaging than would normally apply to the packing group, or may require specific packaging considerations.

—Note.—To assist shippers in the transition to the new packing instructions that become effective in this edition of these Instructions, packages prepared for transport before 31 December 2010 using packing instructions in the 2009-2010 Edition may be presented for transport until 31 March 2011. When this transitional provision is being used, the shipper must indicate on the dangerous-goods transport document the packing instruction number in effect from the 2009-2010 Edition.

Chapter 3

CLASS 1 — EXPLOSIVES

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3.4 PACKING INSTRUCTIONS

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DGP/23-WP/3, paragraph 3.2.23

Packing Instruction 114

a) solid wetted

Inner packagings

Bags
 plastics
 textile
 woven plastics
 Receptacles
 metal
 plastics
wood

Intermediate packagings

Bags
 plastics
 textile, plastic
 coated or lined
 Receptacles
 metal
 plastics
Dividing partitions
wood

Outer packagings

Boxes
 fibreboard (4G)
 natural wood, ordinary (4C1)
 natural wood, with siftproof
 walls (4C2)
~~other metal (4N)~~
 plywood (4D)
 reconstituted wood (4F)
 solid plastics (4H2)
 steel (4A)
 Drums
 aluminium, ~~removable head~~
 (1B1, 1B2)
 fibre (1G)
~~other metal (1N1, 1N2)~~
 plastics, ~~removable head~~
 (1H1, 1H2)
 plywood (1D)
 steel, ~~removable head~~ (1A1,
 1A2)

PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:

— For UN 0077, 0234, 0235 and 0236, packagings must be lead-free.

DGP/23-WP/3, paragraph 3.2.23 and
Corrigendum to UN Model Regulations
(Seventeenth revised Edition)
ST/SG/AC.20/1/Rev.17/Corr.1:

- For UN 0342, inner packagings are not required when metal (1A1, 1A2 ~~or~~, 1B1, 1B2, 1N1 or 1N2) or plastic (1H1 or 1H2) drums are used as outer packagings.
- Intermediate packagings are not required if leakproof removable head drums are used as the outer packaging.

DGP/23-WP/3, paragraph 3.2.23:

b) solid dry

<i>Inner packagings</i>	<i>Intermediate packagings</i>	<i>Outer packagings</i>
Bags	Not necessary	Boxes
paper, kraft		fibreboard (4G)
plastics		natural wood, ordinary (4C1)
textile, siftproof		natural wood, with siftproof walls (4C2)
woven plastics, siftproof		plywood (4D)
Receptacles		reconstituted wood (4F)
fibreboard		Drums
metal		aluminium, removable head
paper		(<u>1B1</u> , 1B2)
plastics		fibre (1G)
<u>wood</u>		other metal (1N1, 1N2)
woven plastics, siftproof		plastics, removable head
		(<u>1H1</u> , 1H2)
		plywood (1D)
		steel, removable head (<u>1A1</u> , 1A2)

PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:

- For UN 0077, 0132, 0234, 0235 and 0236, packagings must be lead-free.
- For UN 0508 and 0509, metal packagings must not be used.
- For UN 0160 and 0161, when metal drums (1A1, 1A2 ~~or~~, 1B1, 1B2, 1N1 or 1N2) are used as the outer packaging, metal packagings must be so constructed that the risk of explosion, by reason of increase in internal pressure from internal or external causes, is prevented.
- For UN 0160 and 0161, inner packagings are not required if drums are used as the outer packaging.

Packing Instruction 130

Inner packagings

Not necessary

Intermediate packagings

Not necessary

Outer packagings

Boxes

aluminium (4B)
 expanded plastics (4H1)
 fibreboard (4G)
 natural wood, ordinary (4C1)
 natural wood, with siftproof walls (4C2)
~~other metal (4N)~~
 plywood (4D)
 reconstituted wood (4F)
 solid plastics (4H2)
 steel (4A)

Drums

aluminium, ~~removable head~~ (1B1, 1B2)
 fibre (1G)
~~other metal (1N1, 1N2)~~
 plastics, ~~removable head~~ (1H1, 1H2)
 plywood (1D)
 steel, ~~removable head~~ (1A1, 1A2)

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Packing Instruction 131

Inner packagings

Bags

paper
 plastics

Receptacles

fibreboard
 metal
 plastics
 wood

Reels

Intermediate packagings

Not necessary

Outer packagings

Boxes

aluminium (4B)
 fibreboard (4G)
 natural wood, ordinary (4C1)
 natural wood, with siftproof walls (4C2)
~~other metal (4N)~~
 plywood (4D)
 reconstituted wood (4F)
 steel (4A)

Drums

aluminium, ~~removable head~~ (1B1, 1B2)
 fibre (1G)
 plastics, ~~removable head~~ (1H1, 1H2)
~~other metal (1N1, 1N2)~~
 plywood (1D)
 steel, ~~removable head~~ (1A1, 1A2)

PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:

— For UN 0029, 0267 and 0455, bags and reels must not be used as inner packagings.

Packing Instruction 133

Inner packagings

Receptacles
 fibreboard
 metal
 plastics
 wood
 Trays, fitted with dividing partitions
 fibreboard
 plastics
 wood

Intermediate packagings

Receptacles
 fibreboard
 metal
 plastics
 wood

Outer packagings

Boxes
 aluminium (4B)
 fibreboard (4G)
 natural wood, ordinary (4C1)
 natural wood, with siftproof walls (4C2)
~~other metal (4N)~~
 plywood (4D)
 reconstituted wood (4F)
 solid plastics (4H2)
 steel (4A)

PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:

- Receptacles are only required as intermediate packagings when the inner packagings are trays.
- For UN 0043, 0212, 0225, 0268 and 0306, trays must not be used as inner packagings.

Packing Instruction 134

Inner packagings

Bags
 water-resistant
 Receptacles
 fibreboard
 metal
 plastics
 wood
 Sheets
 fibreboard, corrugated
 Tubes
 fibreboard

Intermediate packagings

Not necessary

Outer packagings

Boxes
 aluminium (4B)
 fibreboard (4G)
 natural wood, ordinary (4C1)
 natural wood, with siftproof walls (4C2)
~~other metal (4N)~~
 plywood (4D)
 reconstituted wood (4F)
 solid plastics (4H2)
 steel (4A)
 Drums
 aluminium, ~~removable head~~ (1B1, 1B2)
 fibre (1G)
 plastics, ~~removable head~~ (1H1, 1H2)
~~other metal (1N1, 1N2)~~
 plywood (1D)
 steel, ~~removable head~~ (1A1, 1A2)

Packing Instruction 135

Inner packagings

Bags
 paper
 plastics
 Receptacles
 fibreboard
 metal
 plastics
 wood
 Sheets
 paper
 plastics

Intermediate packagings

Not necessary

Outer packagings

Boxes
 aluminium (4B)
 expanded plastics (4H1)
 fibreboard (4G)
 natural wood, ordinary (4C1)
 natural wood, with siftproof walls (4C2)
~~other metal (4N)~~
 plywood (4D)
 reconstituted wood (4F)
 solid plastics (4H2)
 steel (4A)
 Drums
 aluminium, ~~removable head~~ (1B1, 1B2)
 fibre (1G)
~~other metal (1N1, 1N2)~~
 plastics, ~~removable head~~ (1H1, 1H2)
 plywood (1D)
 steel, ~~removable head~~ (1A1, 1A2)

Packing Instruction 136

Inner packagings

Bags
 plastics
 textile
 Boxes
 fibreboard
 plastics
 wood
 Dividing partitions in the
 outer packagings

Intermediate packagings

Not necessary

Outer packagings

Boxes
 aluminium (4B)
 fibreboard (4G)
 natural wood, ordinary (4C1)
 natural wood, with siftproof walls (4C2)
other metal (4N)
 plywood (4D)
 reconstituted wood (4F)
 solid plastics (4H2)
 steel (4A)
 Drums
 aluminium, ~~removable head~~ (1B1, 1B2)
 fibre (1G)
other metal (1N1, 1N2)
~~plastics, removable head~~ (1H1, 1H2)
 plywood (1D)
 steel, ~~removable head~~ (1A1, 1A2)

Packing Instruction 137

Inner packagings

Bags
 plastics
 Boxes
 fibreboard
wood
 Tubes
 fibreboard
 metal
 plastics
 Dividing partitions in the
 outer packagings

Intermediate packagings

Not necessary

Outer packagings

Boxes
 aluminium (4B)
 fibreboard (4G)
 natural wood, ordinary (4C1)
 natural wood, with siftproof walls (4C2)
other metal (4N)
 plywood (4D)
 reconstituted wood (4F)
 steel (4A)

PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:

- For UN 0059, 0439, 0440 and 0441, when the shaped charges are packed singly, the conical cavity must face downwards and the package marked "THIS SIDE UP". When the shaped charges are packed in pairs, the conical cavities must face inwards to minimize the jetting effect in the event of accidental initiation.

Packing Instruction 138

Inner packagings

Bags
plastics

Intermediate packagings

Not necessary

Outer packagings

Boxes
 aluminium (4B)
 fibreboard (4G)
 natural wood, ordinary (4C1)
 natural wood, with siftproof walls (4C2)
~~other metal (4N)~~
 plywood (4D)
 reconstituted wood (4F)
 solid plastics (4H2)
 steel (4A)

Drums
 aluminium, ~~removable head~~ (1B1, 1B2)
 fibre (1G)
~~other metal (1N1, 1N2)~~
 plastics, ~~removable head~~ (1H1, 1H2)
 plywood (1D)
 steel, ~~removable head~~ (1A1, 1A2)

PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:

— If the ends of the articles are sealed, inner packagings are not necessary.

Packing Instruction 139

Inner packagings

Bags
 plastics

Receptacles
 fibreboard
 metal
 plastics
 wood

Reels

Sheets
 paper
 plastics

Intermediate packagings

Not necessary

Outer packagings

Boxes
 aluminium (4B)
 fibreboard (4G)
 natural wood, ordinary (4C1)
 natural wood, with siftproof walls (4C2)
~~other metal (4N)~~
 plywood (4D)
 reconstituted wood (4F)
 solid plastics (4H2)
 steel (4A)

Drums
 aluminium, ~~removable head~~ (1B1, 1B2)
 fibre (1G)
~~other metal (1N1, 1N2)~~
 plastics, ~~removable head~~ (1H1, 1H2)
 plywood (1D)
 steel, ~~removable head~~ (1A1, 1A2)

PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:

— For UN 0065, 0102, 0104, 0289 and 0290, the ends of the detonating cord must be sealed, for example by a plug firmly fixed so that the explosive cannot escape. The ends of "**Cord, detonating, flexible**", must be fastened securely.

— For UN 0065 and 0289, inner packagings are not required when they are in coils.

Packing Instruction 140

Inner packagings

Bags
plastics
Reels
Sheets
paper, kraft
plastics
Receptacles
wood

Intermediate packagings

Not necessary

Outer packagings

Boxes
aluminium (4B)
fibreboard (4G)
natural wood, ordinary (4C1)
natural wood, with siftproof walls (4C2)
other metal (4N)
plywood (4D)
reconstituted wood (4F)
solid plastics (4H2)
steel (4A)
Drums
aluminium, ~~removable head~~ (1B1, 1B2)
fibre (1G)
other metal (1N1, 1N2)
plastics, ~~removable head~~ (1H1, 1H2)
plywood (1D)
steel, ~~removable head~~ (1A1, 1A2)

PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:

- If the ends of UN 0105 are sealed, no inner packagings are required.
- For UN 0101, the packaging must be siftproof except when the fuse is covered by a paper tube and both ends of the tube are covered with removable caps.
- For UN 0101, steel or aluminium boxes or drums must not be used.

Packing Instruction 141

Inner packagings

Receptacles
fibreboard
metal
plastics
wood
Trays, fitted with dividing partitions
plastics
wood
Dividing partitions in the
outer packagings

Intermediate packagings

Not necessary

Outer packagings

Boxes
aluminium (4B)
fibreboard (4G)
natural wood, ordinary (4C1)
natural wood, with siftproof walls (4C2)
other metal (4N)
plywood (4D)
reconstituted wood (4F)
solid plastics (4H2)
steel (4A)
Drums
aluminium, ~~removable head~~ (1B1, 1B2)
fibre (1G)
other metal (1N1, 1N2)
plastics, ~~removable head~~ (1H1, 1H2)
plywood (1D)
steel, ~~removable head~~ (1A1, 1A2)

Packing Instruction 142

<i>Inner packagings</i>	<i>Intermediate packagings</i>	<i>Outer packagings</i>
<p>Bags</p> <ul style="list-style-type: none"> paper plastics <p>Receptacles</p> <ul style="list-style-type: none"> fibreboard metal plastics wood <p>Sheets</p> <ul style="list-style-type: none"> paper <p>Trays, fitted with dividing partitions</p> <ul style="list-style-type: none"> plastics 	<p>Not necessary</p>	<p>Boxes</p> <ul style="list-style-type: none"> aluminium (4B) fibreboard (4G) natural wood, ordinary (4C1) natural wood, with siftproof walls (4C2) other metal (4N) plywood (4D) reconstituted wood (4F) solid plastics (4H2) steel (4A) <p>Drums</p> <ul style="list-style-type: none"> aluminium, removable head (1B1, 1B2) fibre (1G) other metal (1N1, 1N2) plastics, removable head (1H1, 1H2) plywood (1D) steel, removable head (1A1, 1A2)

Packing Instruction 143

<i>Inner packagings</i>	<i>Intermediate packagings</i>	<i>Outer packagings</i>
<p>Bags</p> <ul style="list-style-type: none"> paper, kraft plastics textile textile, rubberized <p>Receptacles</p> <ul style="list-style-type: none"> fibreboard metal plastics wood <p>Trays, fitted with dividing partitions</p> <ul style="list-style-type: none"> plastics wood 	<p>Not necessary</p>	<p>Boxes</p> <ul style="list-style-type: none"> aluminium (4B) fibreboard (4G) natural wood, ordinary (4C1) natural wood, with siftproof walls (4C2) other metal (4N) plywood (4D) reconstituted wood (4F) solid plastics (4H2) steel (4A) <p>Drums</p> <ul style="list-style-type: none"> aluminium, removable head (1B1, 1B2) fibre (1G) other metal (1N1, 1N2) plastics, removable head (1H1, 1H2) plywood (1D) steel, removable head (1A1, 1A2)

PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:

- For UN 0271, 0272, 0415 and 0491, when metal packagings are used, metal packagings must be so constructed that the risk of explosion, by reason of increase in internal pressure from internal or external causes, is prevented.
- Instead of the above inner and outer packagings, composite packagings (6HH2) (plastic receptacle with outer solid box) may be used.

Chapter 4

CLASS 2 — GASES

Parts of this Chapter are affected by State Variations CA 17, US 6, US 15; see Table A-1

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4.2 PACKING INSTRUCTIONS

Packing Instruction 200

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- 4) Gas mixtures containing any of the following gases must not be offered for transport in aluminium alloy cylinders unless approved by the appropriate national authority of the State of Origin and the State of the Operator:

UN 1037 **Ethyl chloride**
 UN 1063 **Methyl chloride**
 UN 1063 **Refrigerant gas R 40**
 UN 1085 **Vinyl bromide, stabilized**
 UN 1086 **Vinyl chloride, stabilized**
 UN 1860 **Vinyl fluoride, stabilized**
 UN 1912 **Methyl chloride and methylene chloride mixture**

- 5) ~~Keys for the column~~ "Special packing provisions":

Material compatibility

- a) Aluminium alloy cylinders are forbidden.
 b) Copper valves are forbidden.
 c) Metal parts in contact with the contents must not contain more than 65 per cent copper.
 d) When steel cylinders are used, only those bearing the "H" mark in accordance with 6;5.2.7.4 p) are permitted.

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Packing Instruction 202

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- 6) Pressure-relief devices

Every closed cryogenic receptacle, having a nominal capacity in excess of 550 L, must be provided with at least 2 pressure-relief devices. The pressure-relief device must be of the type that will resist dynamic forces including surge.

Closed cryogenic receptacles, having a nominal capacity of 550 L or less, must be provided with at least 1 pressure-relief device, and may in addition have a frangible disc in parallel with the spring loaded device in order to meet the requirements of 6;5.1.3.6.5. The pressure-relief device must be of the type that will resist dynamic forces including surge.

Note.— The pressure-relief devices must meet the requirements of 6;5.1.3.6.4 and 6;5.1.3.6.5.

- 7) Compatibility

Materials used to ensure the leakproofness of the joints or for the maintenance of the closures must be compatible with the contents. In the case of receptacles intended for the transport of oxidizing gases (i.e. with a subsidiary risk of 5.1), these materials must not react with these gases in a dangerous manner.

8) Periodic inspection

The periodic inspection and test frequencies of pressure relief valves must not exceed five years.

Note.— Insulated packagings containing refrigerated liquid nitrogen fully absorbed in a porous material are not subject to these Instructions provided they meet the requirements of Special Provision A152.

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Requirements for open cryogenic receptacles

Open cryogenic receptacles must be constructed to meet the following requirements:

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9. Open cryogenic receptacles must bear the following marks permanently affixed, e.g. by stamping, engraving or etching:

- the manufacturer's name and address;
- the model number or name;
- the serial or batch number;
- the UN number and proper shipping name of gases for which the receptacle is intended;
- the capacity of the receptacle in litres.

Note.— ~~The marking on open cryogenic receptacles will become mandatory with effect from 1 January 2012 for open cryogenic receptacles manufactured after 1 January 2012.~~ The size of the marking must be as set out for cylinders in Part 6;5.2.7.1. Open cryogenic receptacles manufactured prior to 1 January 2012 are not required to be so marked.

10. Open cryogenic receptacles are permitted for nitrogen, argon, krypton, neon and xenon refrigerated liquids.

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Packing Instruction 206

Passenger and cargo aircraft for UN 3167, UN 3168 and UN 3169 only

General requirements

Part 4, Chapter 1 requirements must be met, including:

A gas sample may only be accepted for transport as a non-pressurized gas providing it is at a pressure corresponding to ambient atmospheric pressure at the time the containment system is closed and this must not exceed 105 kPa absolute.

DGP/23-WP/3, paragraph 3.2.23.1 b) and
 Corrigendum to UN Model Regulations
 (Seventeenth revised Edition)
 ST/SG/AC.20/1/Rev.17/Corr.1::

Cylinders and gas receptacles conforming to the construction, testing and filling requirements approved by the appropriate national authority are permitted.

1) Compatibility requirements

- Substances must be compatible with their packagings as required by 4;1.1.3.

2) Closure requirements

- Closures must meet the requirements of 4;1.1.4.

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DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

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Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

...

DGP/23-WP/3, paragraph 3.2.12:

Packing Instruction 214

This Instruction applies to storage systems containing hydrogen absorbed in a metal hydride (UN 3468) individually or when contained in equipment and apparatus when transported on cargo aircraft.

- 1) For metal hydride storage systems, the general packing requirements of 4;4.1 must be met.
- 2) Only cylinders not exceeding 150 L in water capacity and having a maximum developed pressure not exceeding 25 MPa are covered by this packing instruction.
- 3) Metal hydride storage systems meeting the applicable requirements of 6;5 for the construction and testing of cylinders containing gas may be used for the transport of hydrogen only.
- 4) When steel cylinders or composite cylinders with steel liners are used, only those bearing the "H" mark, in accordance with 6;5.2.9 j) are permitted.
- 5) Metal hydride storage systems must meet the service conditions, design criteria, rated capacity, type tests, batch tests, routine tests, test pressure, rated charging pressure and provisions for pressure relief devices for transportable metal hydride storage systems specified in ISO 16111:2008, and their conformity and approval must be assessed in accordance with 6;5.2.5.
- 6) Metal hydride storage systems must be filled with hydrogen at a pressure not exceeding the rated charging pressure shown in the permanent markings on the system as specified in ISO 16111:2008.
- 7) The periodic test requirements for a metal hydride storage system must be in accordance with ISO 16111:2008 and carried out in accordance with 6;5.2.6, and the interval between periodic inspections must not exceed five years.
- 8) Storage systems with a water capacity of less than 1 L must be packaged in rigid outer packagings constructed of suitable material of adequate strength and design in relation to the packaging capacity and its intended use. They must be adequately secured or cushioned so as to prevent damage during normal conditions of transport.
- 9) Maximum net quantity per package for cargo aircraft is 100 kg of metal hydride storage systems, including when such storage systems are packed with equipment or contained in equipment.
- 10) Transport on passenger aircraft is forbidden.

DGP/23-WP/3, paragraph 3.2.23:

Packing Instruction 215
Passenger and cargo aircraft for UN 3478 and 3479 only

...

OUTER PACKAGINGS

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	Aluminium (1B2)	Aluminium (3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (3H2)
Natural wood (4C1, 4C2)	Plastics (1H2)	Steel (3A2)
<u>Other metal (4N)</u>	Plywood (1D)	
Plastics (4H1, 4H2)	Steel (1A2)	
Plywood (4D)		
Reconstituted wood (4F)		
Steel (4A)		

Packing Instruction Y215
Limited quantities for UN 3478 and 3479 only

...

OUTER PACKAGINGS

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Plastics	Steel
<u>Other metal</u>	Plywood	
Plastics	Steel	
Plywood		
Reconstituted wood		
Steel		

DGP/23-WP/3, paragraph 3.2.24:

Packing Instruction 216
Passenger and cargo aircraft for UN 3478 and 3479 (contained in equipment) only

...

ADDITIONAL PACKING REQUIREMENTS

- Fuel cell cartridges that are contained in equipment must be protected against short circuit and the equipment must be protected against inadvertent operation.
- Equipment must be securely cushioned in the outer packagings.
- Fuel cell systems must not charge batteries during transport.
- On passenger aircraft, each fuel cell system and each fuel cell cartridge must conform to IEC [PAS 62282-6-1 62282-6-100](#) Ed. 1 or a standard approved by the appropriate authority of the State of Origin.

...

...

DGP/23-WP/3, paragraph 3.2.23.1 d):

Packing Instruction 218

Passenger and cargo aircraft for UN 3500, 3501, 3502, 3503, 3504 and 3505 only

General requirements

Part 4:1.1.1 and 1.1.8 requirements must be met, including:

1) Compatibility requirements

— Substances must be compatible with their packagings as required by 4:1.1.3.

Unless otherwise indicated in these Instructions, cylinders conforming to the applicable requirements of 6:5 are permitted.

ADDITIONAL PACKING REQUIREMENTS

- The maximum test period for periodic inspection must be 5 years.
- Cylinders must be so filled that at 50 °C the non-gaseous phase does not exceed 95% of their water capacity and they are not completely filled at 60 °C. When filled, the internal pressure at 65 °C must not exceed the test pressure of the cylinders. The vapour pressures and volumetric expansion of all substances in the cylinders must be taken into account.
- The minimum test pressure must be in accordance with Packing Instruction 200 for the propellant but must not be less than 20 bar.
- Non-refillable cylinders used may have a water capacity in litres not exceeding 1 000 litres divided by the test pressure expressed in bars provided capacity and pressure restrictions of the construction standard comply with ISO 11118:1999, which limits the maximum capacity to 50 litres.

...

Chapter 5 CLASS 3 — FLAMMABLE LIQUIDS

~~*Note. Class 3 packing instructions have been replaced with the reformatted packing instructions which appeared in Attachment 4 of the 2009-2010 Edition. Further modifications to these packing instructions are indicated with the customary margin symbols.*~~

...

5.1 PACKING INSTRUCTIONS

DGP/23-WP/3, paragraph 3.2.23:

Packing Instructions Y340 – Y344

Limited quantities
Passenger and cargo aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6:3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Other metal	Steel
<u>Other metal</u>	Plastics	
Plastics	Plywood	
Plywood	Steel	
Reconstituted wood		
Steel		

Packing Instructions 350 – 355

Passenger aircraft

...

ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

Packing Group I

DGP/23-WP/3, paragraph 3.2.25:

- 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.

Packing Group III

- Packagings must meet the Packing Group II performance requirements if the substance has a Class 8 subsidiary risk.

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
 Fibreboard (4G)
 Natural wood (4C1, 4C2)
 Other metal (4N)
 Plastics (4H1, 4H2)
 Plywood (4D)
 Reconstituted wood (4F)
 Steel (4A)

Drums

Aluminium (1B1, 1B2)
 Fibre (1G)
 Other metal (1N1, 1N2)
 Plastics (1H1, 1H2)
 Plywood (1D)
 Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
 Plastics (3H1, 3H2)
 Steel (3A1, 3A2)

...

Packing Instructions 360 – 366

Cargo aircraft only

...

ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

Packing Group I

DGP/23-WP/3, paragraph 3.2.25:

- 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.

Packing Group III

- Packagings must meet the Packing Group II performance requirements if the substance has a Class 8 subsidiary risk.

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	Aluminium (<u>1B1</u> , 1B2)	Aluminium (<u>3B1</u> , 3B2)
Fibreboard (4G)	Fibre (1G)	Other metal (3N2)
Natural wood (4C1, 4C2)	Other metal (<u>1N1</u> , 1N2)	Plastics (<u>3H1</u> , 3H2)
<u>Other metal (4N)</u>	Plywood (1D)	Steel (<u>3A1</u> , 3A2)
Plastics (4H1, 4H2)	Plastics (<u>1H1</u> , 1H2)	
Plywood (4D)	Steel (<u>1A1</u> , 1A2)	
Reconstituted wood (4F)		
Steel (4A)		

...

Packing Instruction 370

Passenger and cargo aircraft for UN 3269 (Packing Group II or III) only

DGP/23-WP/3, paragraph 3.2.30:

!

...

COMBINATION PACKAGINGS					SINGLE PACKAGINGS
<i>Packing conditions</i>	<i>Inner packaging (see 6;3.2)</i>	<i>Inner packaging quantity (per receptacle) — for liquid activator</i>	<i>Inner packaging quantity (per receptacle) — for solid activator</i>	<i>Total quantity per package</i>	
Activator (Organic peroxide)	Plastics*	125 mL	500 g	5 kg	No
	Metal*	125 mL	500 g		
Base material Class 3 Packing Group II or III	Glass	1.0 L	4.0 L n/a	5 kg	
	Plastics	5.0 L	5.0 L n/a		
	Metal	5.0 L	5.0 L n/a		
<u>Activator (Organic peroxide)</u>	<u>Plastics*</u>	<u>125 mL</u>	<u>500 g</u>	<u>10 kg</u>	<u>No</u>
	<u>Metal*</u>	<u>125 mL</u>	<u>500 g</u>		
<u>Base material Class 3 Packing Group III</u>	<u>Glass</u>	<u>2.5 L</u>	<u>n/a</u>	<u>10 kg</u>	
	<u>Plastics</u>	<u>10 L</u>	<u>n/a</u>		
	<u>Metal</u>	<u>10 L</u>	<u>n/a</u>		

*Including tubes

!

...

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	Aluminium (<u>1B1</u> , 1B2)	Aluminium (<u>3B1</u> , 3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (<u>3H1</u> , 3H2)
Natural wood (4C1, 4C2)	Other metal (<u>1N1</u> , 1N2)	Steel (<u>3A1</u> , 3A2)
<u>Other metal (4N)</u>	Plastics (<u>1H1</u> , 1H2)	
Plastics (4H1, 4H2)	Steel (<u>1A1</u> , 1A2)	
Plywood (4D)		
Reconstituted wood (4F)		
Steel (4A)		

Packing Instruction Y370

Limited quantities
 Passenger and cargo aircraft for UN 3269 (Packing Group II or III) only

DGP/23-WP/3, paragraph 3.2.30:

...

COMBINATION PACKAGINGS						SINGLE PACKAGINGS
Packing conditions	Inner packaging (see 6;3.2)	Inner packaging quantity (per receptacle) — for liquid activator	Inner packaging quantity (per receptacle) — for solid activator	Total quantity per package	Total gross mass per package	
Activator (Organic peroxide)	Plastics*	30 mL	100 g	1 kg	30 kg	No
	Metal*	30 mL	100 g			
Base material Class 3 Packing Group II or III	Glass	1.0 L	4.0 L /n/a			
	Plastics	1.0 L	4.0 L /n/a			
	Metal	1.0 L	4.0 L /n/a			
<u>Activator (Organic peroxide)</u>	<u>Plastics*</u>	<u>30 mL</u>	<u>100 g</u>	<u>5 kg</u>		
	<u>Metal*</u>	<u>30 mL</u>	<u>100 g</u>			
<u>Base material Class 3 Packing Group III</u>	<u>Glass</u>	<u>2.5 L</u>	<u>n/a</u>			
	<u>Plastics</u>	<u>5.0 L</u>	<u>n/a</u>			
	<u>Metal</u>	<u>5.0 L</u>	<u>n/a</u>			

*Including tubes

...

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium
 Fibreboard
 Natural wood
Other metal
 Plastics
 Plywood
 Reconstituted wood
 Steel

Drums

Aluminium
 Fibre
 Other metal
 Plastics
 Steel

Jerricans

Aluminium
 Plastics
 Steel

Packing Instruction 371

Passenger and cargo aircraft for UN 1204 and UN 3064 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (**1B1**, 1B2)
Fibre (1G)
Other metal (**1N1**, 1N2)
Plastics (**1H1**, 1H2)
Steel (**1A1**, 1A2)

Jerricans

Aluminium (**3B1**, 3B2)
Plastics (**3H1**, 3H2)
Steel (**3A1**, 3A2)

Packing Instruction 372

Cargo aircraft only for UN 3165 only

General requirements

Part 4, Chapter 1 requirements must be met, including:

1) Compatibility requirements

- Substances must be compatible with their packagings as required by 4;1.1.3.

2) Closure requirements

- Closures must meet the requirements of 4;1.1.4.

ADDITIONAL PACKING REQUIREMENTS

UN 3165 **Aircraft hydraulic power unit fuel tank** (containing a mixture of anhydrous hydrazine and methyl hydrazine) (M86 fuel) and designed for installation as complete units in aircraft are acceptable, subject to either of the following conditions:

Corrigendum to UN Model Regulations
(Seventeenth revised Edition)
ST/SG/AC.20/1/Rev.17/Corr.1:

- a) the unit must consist of an aluminium pressure ~~vessel receptacle~~ made from tubing and having welded heads. Primary containment of the fuel within this ~~vessel receptacle~~ must consist of a welded aluminium bladder having a maximum internal volume of 46 L. The outer ~~vessel receptacle~~ must have a minimum design gauge pressure of 1 275 kPa and a minimum burst gauge pressure of 2 755 kPa. Each ~~vessel receptacle~~ must be leak-checked during manufacture and before shipment and must be found leakproof. The complete inner unit must be securely packed in non-combustible cushioning material, such as vermiculite, in a strong outer tightly closed metal packaging which will adequately protect all fittings. Maximum quantity of fuel per unit and package is 42 L; or
- b) the unit must consist of an aluminium pressure ~~vessel receptacle~~. Primary containment of the fuel within this ~~vessel receptacle~~ must consist of a welded hermetically sealed fuel compartment with an elastomeric bladder having a maximum internal volume of 46 L. The pressure ~~vessel receptacle~~ must have a minimum design gauge pressure of 2 860 kPa and a minimum burst gauge pressure of 5 170 kPa. Each ~~vessel receptacle~~ must be leak-checked during manufacture and before shipment and must be found leakproof. The complete inner unit must be securely packed in non-combustible cushioning material, such as vermiculite, in a strong outer tightly closed metal packaging which will adequately protect all fittings. Maximum quantity of fuel per unit and package is 42 L.

Note.— This packing instruction is the same as UN packing instruction P301.

Packing Instruction 373

Passenger and cargo aircraft for UN 1228 (Packing Group II or III) only

...

DGP/23-WP/3, paragraph 3.2.25:

ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

Glass 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.

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

...

Packing Instruction Y373

Limited quantities
Passenger and cargo aircraft for UN 1228 (Packing Group III) only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium
Fibreboard
Natural wood
Other metal
Plastics
Plywood
Reconstituted wood
Steel

Drums

Aluminium
Fibre
Other metal
Plastics
Steel

Jerricans

Aluminium
Plastics
Steel

...

Packing Instruction 374

Passenger and cargo aircraft for UN 3473 only

...

OUTER PACKAGINGS

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (1N2)
Plastics (1H2)
Plywood (1D)
Steel (1A2)

Jerricans

Steel (3A2)
Plastics (3H2)
Aluminium (3B2)

Packing Instruction Y374

Limited quantities for UN 3473 only

...

OUTER PACKAGINGS

Boxes

Aluminium
Fibreboard
Natural wood
Other metal
Plastics
Plywood
Reconstituted wood
Steel

Drums

Aluminium
Fibre
Other metal
Plastics
Plywood
Steel

Jerricans

Aluminium
Plastics
Steel

DGP/23-WP/3, paragraph 3.2.24:

Packing Instruction 375

Passenger and cargo aircraft for UN 3473 (contained in equipment) only

...

ADDITIONAL PACKING REQUIREMENTS

- Fuel cell cartridges that are contained in equipment must be protected against short circuit and the equipment must be protected against inadvertent operation.
- Equipment must be securely cushioned in the outer packagings.
- Fuel cell systems must not charge batteries during transport.
- On passenger aircraft, each fuel cell system and each fuel cell cartridge must conform to IEC [PAS-62282-6-1 62282-6-100](#) Ed. 1 or a standard approved by the appropriate authority of the State of Origin.

...

...

DGP/23-WP/3, paragraph 3.2.23:

...

Packing Instruction 377

~~Passenger and e~~Cargo aircraft only for Chlorosilanes

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS

<i>Boxes</i>	<i>Drums</i>
Fibreboard (4G)	Fibre (1G)
Natural wood (4C1, 4C2)	Plastics (<u>1H1</u> , 1H2)
Plastics (4H1, 4H2)	Plywood (1D)
Plywood (4D)	Steel (<u>1A1</u> , 1A2)
Reconstituted wood (4F)	
Steel (4A)	

...

Chapter 6

CLASS 4 — FLAMMABLE SOLIDS; SUBSTANCES LIABLE TO SPONTANEOUS COMBUSTION; SUBSTANCES WHICH, IN CONTACT WITH WATER, EMIT FLAMMABLE GASES

~~Note.— Class 4 packing instructions have been replaced with the reformatted packing instructions which appeared in Attachment 4 of the 2009-2010 Edition. Further modifications to these packing instructions are indicated with the customary margin symbols.~~

...

6.2 PACKING INSTRUCTIONS

Packing Instructions Y440 – Y443

Limited quantities
Passenger and cargo aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Plastics	Steel
<u>Other metal</u>	Plywood	
Plastics	Other metal	
Plywood	Steel	
Reconstituted wood		
Steel		

Packing Instructions 445 – 446

Passenger aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

Packing Instructions 448 – 449

Cargo aircraft only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

ADDITIONAL PACKING REQUIREMENTS FOR SINGLE PACKAGINGS

Packing Group III

- Packagings must meet the Packing Group II performance requirements.
- Fibre, wood and plywood single packagings must be fitted with a suitable liner.

SINGLE PACKAGINGS

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C2)
Other metal (4N)
Plywood (4D)
Plastics (4H2)
Reconstituted wood (4F)
Steel (4A)

Composites

All (see 6;3.1.18)

Cylinders

See 4;2.7

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

Packing Instruction 451

Passenger and cargo aircraft — wetted explosives (Packing Group I)

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A2)

Jerricans

Aluminium (3B2)
Other metal (3N2)
Plastics (3H1, 3H2)
Steel (3A2)

Packing Instruction 452

Passenger aircraft for UN 2555, 2556 and 2557 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (1N2)
Plastics (1H1, 1H2)
Plywood (1D)

Jerricans

Aluminium (3B2)
Other metal (3N2)
Plastics (3H1, 3H2)
Steel (3A2)

Packing Instruction 453

Cargo aircraft only for UN 2555, 2556 and 2557 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (1N2)
Plastics (1H1, 1H2)
Plywood (1D)

Jerricans

Aluminium (3B2)
Other metal (3N2)
Plastics (3H1, 3H2)
Steel (3A2)

...

Packing Instruction 454

Passenger and cargo aircraft for UN 1324 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

* These packagings are permitted only for a maximum of 600 m of film.

Packing Instruction Y454

Limited quantities
Passenger and cargo aircraft for UN 1324 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium
Fibreboard*
Natural wood
Other metal
Plywood
Reconstituted wood
Solid plastic*
Steel

Drums

Aluminium
Fibre*
Other metal

Plastics*
Steel

Jerricans

Aluminium
Plastics*
Steel

Packing Instruction 455

Passenger and cargo aircraft for UN 1944 and 1945 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

Packing Instruction Y455

Limited quantities
Passenger and cargo aircraft for UN 1944 and 1945 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Other metal	Steel
<u>Other metal</u>	Plastics	
Plastics	Steel	
Plywood		
Reconstituted wood		
Steel		

...

Packing Instruction 457

Passenger and cargo aircraft for UN 3241 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	Aluminium (<u>1B1</u> , 1B2)	Aluminium (<u>3B1</u> , 3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (<u>3H1</u> , 3H2)
Natural wood (4C1, 4C2)	<u>Other metal (1N2)</u>	Steel (<u>3A1</u> , 3A2)
<u>Other metal (4N)</u>	Plastics (<u>1H1</u> , 1H2)	
Plastics (<u>4H1</u> , 4H2)	Plywood (1D)	
Plywood (4D)	Steel (<u>1A1</u> , 1A2)	
Reconstituted wood (4F)		
Steel (4A)		

...

Packing Instruction Y457

Limited quantities
Passenger and cargo aircraft for UN 3241 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Other metal	Steel
<u>Other metal</u>	Plastics	
Plastics	Steel	
Plywood		
Reconstituted wood		
Steel		

Packing Instruction 458

Passenger and cargo aircraft for UN 3270 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (1N2)
Plastics (1H2)
Steel (1A2)

Jerricans

Aluminium (3B2)
Plastics (3H2)
Steel (3A2)

Packing Instruction Y458

Limited quantities
Passenger and cargo aircraft for UN 3270 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium
Fibreboard
Natural wood
Other metal
Plastics
Plywood
Reconstituted wood
Steel

Drums

Aluminium
Fibre
Other metal
Plastics
Steel

Jerricans

Aluminium
Plastics
Steel

Packing Instruction 459

Passenger and cargo aircraft — self-reactive substances

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Fibreboard (4G)
Natural wood (4C1, 4C2)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)

Drums

Fibre (1G)
Plastics (1H1, 1H2)
Plywood (1D)

Jerricans

Plastics (3H1, 3H2)

Packing Instruction 462 – 463

Passenger aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

...

Packing Instruction 464 – 465

Cargo aircraft only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

...

Packing Instruction 466 – 469

Passenger aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

Packing Instruction 470 – 471

Cargo aircraft only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

ADDITIONAL PACKING REQUIREMENTS FOR SINGLE PACKAGINGS

Packing Group III

- Packagings must meet the Packing Group II performance requirements.
- Fibre, wood and plywood single packagings must be fitted with a suitable liner.

SINGLE PACKAGINGS

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C2)
Other metal (4N)
Plastics (4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Composites

All (see 6;3.1.18)

Cylinders

See 4;2.7

Drums

Aluminium (1B1, 1B2)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

Packing Instruction 472

Passenger and cargo aircraft for UN 1362 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Steel (3A1, 3A2)

Packing Instruction 473

Passenger and cargo aircraft — for UN 1378 and UN 2881 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

...

Packing Instructions Y474 – Y477

Limited quantities
Passenger and cargo aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium
Fibreboard
Natural wood
Other metal
Plastics
Plywood
Reconstituted wood
Steel

Drums

Aluminium
Fibre
Other metal
Plastics
Steel

Jerricans

Aluminium
Plastics
Steel

Packing Instructions 478 – 479

Passenger aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

...

...

Packing Instructions 480 – 482

Cargo aircraft only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (**1B1**, 1B2)
Fibre (1G)
Other metal (**1N1**, 1N2)
Plastics (**1H1**, 1H2)
Plywood (1D)
Steel (**1A1**, 1A2)

Jerricans

Aluminium (**3B1**, 3B2)
Plastics (**3H1**, 3H2)
Steel (**3A1**, 3A2)

...

Packing Instructions 483 – 486

Passenger aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (**1B1**, 1B2)
Fibre (1G)
Other metal (**1N1**, 1N2)
Plastics (**1H1**, 1H2)
Plywood (1D)
Steel (**1A1**, 1A2)

Jerricans

Aluminium (**3B1**, 3B2)
Plastics (**3H1**, 3H2)
Steel (**3A1**, 3A2)

Packing Instructions 487 – 491

Cargo aircraft only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (**1B1**, 1B2)
Fibre (1G)
Other metal (**1N1**, 1N2)
Plastics (**1H1**, 1H2)
Plywood (1D)
Steel (**1A1**, 1A2)

Jerricans

Aluminium (**3B1**, 3B2)
Plastics (**3H1**, 3H2)
Steel (**3A1**, 3A2)

...

SINGLE PACKAGINGS FOR PACKING GROUP I

Composites

All (see 6;3.1.18)

Cylinders

See 4;2.7

Drums

Aluminium (1B1)
Other metal (1N1)
Plastics (1H1)
Steel (1A1)

Jerricans

Aluminium (3B1)
Plastics (3H1)
Steel (3A1)

SINGLE PACKAGINGS FOR PACKING GROUPS II AND III ONLY


<i>Boxes</i>	<i>Composites</i>	<i>Cylinders</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B) Fibreboard (4G) Natural wood (4C2) <u>Other metal (4N)</u> Plastics (4H2) Plywood (4D) Reconstituted wood (4F) Steel (4A)	All (see 6;3.1.18)	See 4;2.7	Aluminium (1B1, 1B2) Other metal (1N1, 1N2) Plastics (1H1, 1H2) Steel (1A1, 1A2)	Aluminium (3B1, 3B2) Plastics (3H1, 3H2) Steel (3A1, 3A2)

Packing Instruction 492

Passenger and cargo aircraft for UN 3292 only

...

DGP/23-WP/3, paragraph 3.2.12:

COMBINATION PACKAGINGS				SINGLE PACKAGINGS
<i>UN number and proper shipping name</i>	<i>Packing conditions</i>	<i>Total quantity per package — passenger</i>	<i>Total quantity per package — cargo</i>	
UN 3292 Batteries, containing sodium	Batteries may be offered for transport and transported unpacked or in protective enclosures such as fully enclosed or wooden slatted crates that are not subject to the requirements of Part 6 of these Instructions.	Forbidden	No limit	No limit
UN 3292 Cells, containing sodium		25 kg 	No limit	No

...

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B) Fibreboard (4G) Natural wood (4C1, 4C2) <u>Other metal (4N)</u> Plastics (4H1, 4H2) Plywood (4D) Reconstituted wood (4F) Steel (4A)	Aluminium (1B2) Fibre (1G) Other metal (1N2) Plastics (1H2) Steel (1A2)	Aluminium (<u>3B1</u> , 3B2) Plastics (<u>3H1</u> , 3H2) Steel (<u>3A1</u> , 3A2)

Packing Instruction 493

Passenger aircraft for UN 3399 only

...

DGP/23-WP/3, paragraph 3.2.25:

ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

- Glass containers 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.
- Packagings must meet the Packing Group II performance requirements.

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
 Fibreboard (4G)
 Natural wood (4C1, 4C2)
Other metal (4N)
 Plastics (4H1, 4H2)
 Plywood (4D)
 Reconstituted wood (4F)
 Steel (4A)

Drums

Aluminium (1B1, 1B2)
 Fibre (1G)
 Other metal (1N1, 1N2)
 Plastics (1H1, 1H2)
 Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
 Plastics (3H1, 3H2)
 Steel (3A1, 3A2)

...

Packing Instruction 494

Cargo aircraft only for UN 3399

...

DGP/23-WP/3, paragraph 3.2.25:

ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

Packing Group I

- Inner packagings must have threaded enclosures and must be surrounded in inert cushioning and absorbent material in a quantity sufficient to absorb the entire contents and enclosed in a leakproof liner, plastic bag or other equally effective means of intermediate leakproof containment.

Packing Group II

- Glass inner packagings must be packed with sufficient absorbent material to absorb the entire contents of the inner packagings and enclosed in a leakproof liner, plastic bag or other equally effective means of intermediate leakproof containment.

Packing Group III

- Packagings must meet the Packing Group II performance requirements.

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
 Fibreboard (4G)
 Natural wood (4C1, 4C2)
Other metal (4N)
 Plastics (4H1, 4H2)
 Plywood (4D)
 Reconstituted wood (4F)
 Steel (4A)

Drums

Aluminium (1B1, 1B2)
 Fibre (1G)
 Other metal (1N1, 1N2)
 Plastics (1H1, 1H2)
 Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
 Plastics (3H1, 3H2)
 Steel (3A1, 3A2)

DGP/23-WP/3, paragraph 3.2.23:

Packing Instruction 495

Passenger and cargo aircraft for UN 3476 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium(4B)
 Fibreboard (4G)
 Natural wood (4C1, 4C2)
Other metal (4N)
 Plastics (4H2)
 Plywood (4D)
 Reconstituted wood (4F)
 Steel (4A)

Drums

Aluminium(1B2)
 Fibre (1G)
 Other metal (1N2)
 Plastics (1H2)
 Plywood (1D)
 Steel (1A2)

Jerricans

Aluminium (3B2)
 Plastics (3H2)
 Steel (3A2)

Packing Instruction Y495

Limited quantities for UN 3476 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium
Fibreboard
Natural wood
Other metal
Plastics
Plywood
Reconstituted wood
Steel

Drums

Aluminium
Fibre
Other metal
Plastics
Plywood
Steel

Jerricans

Aluminium
Plastics
Steel

DGP/23-WP/3, paragraph 3.2.24:

Packing Instruction 496

Passenger and cargo aircraft for UN 3476 (contained in equipment) only

...

ADDITIONAL PACKING REQUIREMENTS

- Fuel cell cartridges that are contained in equipment must be protected against short circuit and the equipment must be protected against inadvertent operation.
- Equipment must be securely cushioned in the outer packagings.
- The mass of each fuel cell cartridge must not exceed 1 kg.
- Fuel cell systems must not charge batteries during transport.
- On passenger aircraft, each fuel cell system and each fuel cell cartridge must conform to IEC [PAS 62282-6-1](#) [62282-6-100](#) Ed. 1 or a standard approved by the appropriate authority of the State of Origin.

...

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Chapter 7

CLASS 5 — OXIDIZING SUBSTANCES; ORGANIC PEROXIDES

~~Note. Class 5 packing instructions have been replaced with the reformatted packing instructions which appeared in Attachment 4 of the 2009-2010 Edition. Further modifications to these packing instructions are indicated with the customary margin symbols.~~

...

7.2 PACKING INSTRUCTIONS

DGP/23-WP/3, paragraph 3.2.23:

Packing Instructions Y540 – Y541		
Limited quantities Passenger and cargo aircraft		
...		
OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)		
<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Other metal	Steel
<u>Other metal</u>	Plastics	
Plastics	Steel	
Plywood		
Reconstituted wood		
Steel		

Packing Instructions Y543 – Y546		
Limited quantities Passenger and cargo aircraft		
...		
OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)		
<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Other metal	Steel
<u>Other metal</u>	Plastics	
Plastics	Steel	
Plywood		
Reconstituted wood		
Steel		

Packing Instructions 550 – 551

Passenger aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

Packing Instructions 553 – 555

Cargo aircraft only

...

ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

Packing Group I

DGP/23-WP/3, paragraph 3.2.25:

- UN 1873 only glass inner packagings are permitted.
- 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.

Packing Group III

- Packagings must meet the Packing Group II performance requirements.

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

...

Packing Instructions 557 – 559

Passenger aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS FOR PACKING GROUP I

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

OUTER PACKAGINGS OF COMBINATION PACKAGINGS FOR PACKING GROUPS II AND III

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

Packing Instructions 561 – 563

Cargo aircraft only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS FOR PACKING GROUP I

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

OUTER PACKAGINGS OF COMBINATION PACKAGINGS FOR PACKING GROUPS II AND III ONLY

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

ADDITIONAL PACKING REQUIREMENTS FOR SINGLE PACKAGINGS

Fibre, wood and plywood single packagings must be fitted with a suitable liner.

Packing Group III

— Packagings must meet the Packing Group II performance requirements.

SINGLE PACKAGINGS FOR PACKING GROUP I*Drums*

Aluminium (1B1, 1B2)
Other metal (1N1, 1N2)
Steel (1A1, 1A2)

SINGLE PACKAGINGS FOR PACKING GROUPS II AND III

<i>Boxes</i>	<i>Composites</i>	<i>Cylinders</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B) Fibreboard (4G) Natural wood (4C2) <u>Other metal (4N)</u> Plastics (4H2) Plywood (4D) Reconstituted wood (4F) Steel (4A)	All (see 6;3.1.18)	See 4:2.7	Aluminium (1B1, 1B2) Fibre (1G) Other metal (1N1, 1N2) Plastics (1H1, 1H2) Plywood (1D) Steel (1A1, 1A2)	Aluminium (3B1, 3B2) Plastics (3H1, 3H2) Steel (3A1, 3A2)

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Packing Instruction 570

Passenger and cargo aircraft

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OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Fibreboard (4G) Natural wood (4C1, 4C2) <u>Other metal (4N)</u> Plastics (4H1, 4H2) Plywood (4D) Reconstituted wood (4F)	Fibre (1G) Plastics (<u>1H1</u> , 1H2) Plywood (1D)	Plastics (<u>3H1</u> , 3H2)

Chapter 8

CLASS 6 — TOXIC AND INFECTIOUS SUBSTANCES

~~Note.— Class 6, Division 6.2 packing instructions have been replaced with the reformatted packing instructions which appeared in Attachment 4 of the 2009-2010 Edition. Further modifications to these packing instructions are indicated with the customary margin symbols. Class 6, Division 6.1 packing instructions have not been reformatted.~~

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8.1 PACKING INSTRUCTIONS

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Packing Instruction 622

The general packing requirements of 4;1 except 1.1.20 must be met.

Consignments must be prepared in such a manner that they arrive at their destination in good condition and present no hazard to persons or animals during transport.

Consignments must be packed in steel drums (1A2), aluminium drums (1B2), other metal drums (1N2), plywood drums (1D), fibre drums (1G), plastic drums (1H2), steel jerricans (3A2), aluminium jerricans (3B2), plastic jerricans (3H2), steel boxes (4A), aluminium boxes (4B), wooden boxes (4C1, 4C2), plywood boxes (4D), reconstituted wood boxes (4F) or fibreboard boxes (4G), plastic boxes (4H1, 4H2), other metal boxes (4N). Packagings must meet Packing Group II requirements.

The packaging tests may be those appropriate for solids when there is sufficient absorbent material to absorb the entire amount of liquid present and the packaging is capable of retaining liquids.

In all other circumstances, the packaging tests must be those appropriate for liquids.

Packagings intended to contain sharp objects such as broken glass and needles must be resistant to puncture and retain liquids under the performance test conditions for the packaging.

Packings must conform to the Packing Group II performance level for solids.

Packing Instructions Y640 – Y642

Limited quantities
Passenger and cargo aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Other metal	Steel
<u>Other metal</u>	Plastics	
Plastics	Steel	
Plywood		
Reconstituted wood		
Steel		

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Packing Instructions Y644 – Y645
 Limited quantities
 Passenger and cargo aircraft

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OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Other metal	Steel
<u>Other metal</u>	Plastics	
Plastics	Steel	
Plywood		
Reconstituted wood		
Steel		

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Packing Instructions 651 – 655
 Passenger aircraft

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DGP/23-WP/3, paragraph 3.2.25:

ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

Packing Group I

— 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.

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	Aluminium (<u>1B1</u> , 1B2)	Aluminium (<u>3B1</u> , 3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (<u>3H1</u> , 3H2)
Natural wood (4C1, 4C2)	Other metal (<u>1N1</u> , 1N2)	Steel (<u>3A1</u> , 3A2)
<u>Other metal (4N)</u>	Plastics (<u>1H1</u> , 1H2)	
Plastics (4H1, 4H2)	Plywood (1D)	
Plywood (4D)	Steel (<u>1A1</u> , 1A2)	
Reconstituted wood (4F)		
Steel (4A)		

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Packing Instructions 657 – 663

Cargo aircraft only

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DGP/23-WP/3, paragraph 3.2.25:

ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

Packing Group I

— 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.

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	Aluminium (<u>1B1</u> , 1B2)	Aluminium (<u>3B1</u> , 3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (<u>3H1</u> , 3H2)
Natural wood (4C1, 4C2)	Other metal (<u>1N1</u> , 1N2)	Steel (<u>3A1</u> , 3A2)
<u>Other metal (4N)</u>	Plastics (<u>1H1</u> , 1H2)	
Plastics (4H1, 4H2)	Plywood (1D)	
Plywood (4D)	Steel (<u>1A1</u> , 1A2)	
Reconstituted wood (4F)		
Steel (4A)		

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Packing Instructions 665 – 670

Passenger aircraft

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OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	Aluminium (<u>1B1</u> , 1B2)	Aluminium (<u>3B1</u> , 3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (<u>3H1</u> , 3H2)
Natural wood (4C1, 4C2)	Other metal (<u>1N1</u> , 1N2)	Steel (<u>3A1</u> , 3A2)
<u>Other metal (4N)</u>	Plastics (<u>1H1</u> , 1H2)	
Plastics (4H1, 4H2)	Plywood (1D)	
Plywood (4D)	Steel (<u>1A1</u> , 1A2)	
Reconstituted wood (4F)		
Steel (4A)		

ADDITIONAL PACKING REQUIREMENTS FOR SINGLE PACKAGINGS

Fibre, wood and plywood single packagings must be fitted with a suitable liner.

SINGLE PACKAGINGS FOR PACKING GROUP III (PI 670)

<i>Bags</i>	<i>Boxes</i>	<i>Composites</i>	<i>Cylinders</i>	<i>Drums</i>	<i>Jerricans</i>
Paper (5M2) Plastic film (5H4) Textile (5L3) Woven plastics (5H3)	Aluminium (4B) Fibreboard (4G) Natural wood (4C2) Other metal (4N) Plastics (4H2) Plywood (4D) Reconstituted wood (4F) Steel (4A)	All (see 6;3.1.18)	See 4;2.7	Aluminium (1B1, 1B2) Fibre (1G) Other metal (1N1, 1N2) Plastics (1H1, 1H2) Plywood (1D) Steel (1A1, 1A2)	Aluminium (3B1, 3B2) Plastics (3H1, 3H2) Steel (3A1, 3A2)

Packing Instructions 672 – 677

Cargo aircraft only

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OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B) Fibreboard (4G) Natural wood (4C1, 4C2) Other metal (4N) Plastics (4H1, 4H2) Plywood (4D) Reconstituted wood (4F) Steel (4A)	Aluminium (1B1 , 1B2) Fibre (1G) Other metal (1N1 , 1N2) Plastics (1H1 , 1H2) Steel (1A1 , 1A2)	Aluminium (3B1 , 3B2) Plastics (3H1 , 3H2) Steel (3A1 , 3A2)

...

SINGLE PACKAGINGS FOR PACKING GROUPS II AND III ONLY

<i>Boxes</i>	<i>Composites</i>	<i>Cylinders</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B) Fibreboard (4G) Natural wood (4C2) Other metal (4N) Plastics (4H2) Plywood (4D) Reconstituted wood (4F) Plastics (4H2) Steel (4A)	All (see 6;3.1.18)	See 4;2.7	Aluminium (1B1, 1B2) Fibre (1G) Other metal (1N1, 1N2) Plastics (1H1, 1H2) Plywood (1D) Steel (1A1, 1A2)	Aluminium (3B1, 3B2) Plastics (3H1, 3H2) Steel (3A1, 3A2)

SINGLE PACKAGINGS FOR PACKING GROUP III (PI 677 only)

<i>Bags</i>	<i>Boxes</i>	<i>Composites</i>	<i>Cylinders</i>	<i>Drums</i>	<i>Jerricans</i>
Paper (5M2)	Aluminium (4B)	All (see	See 4;2.7	Aluminium (1B1, 1B2)	Aluminium (3B1, 3B2)
Plastic film (5H4)	Fibreboard (4G)	6;3.1.18)		Fibre (1G)	Plastics (3H1, 3H2)
Textile (5L3)	Natural wood (4C2)			Other metal (1N1, 1N2)	Steel (3A1, 3A2)
Woven plastics (5H3)	<u>Other metal (4N)</u>			Plastics (1H1, 1H2)	
	Plastics (4H2)			Plywood (1D)	
	Plywood (4D)			Steel (1A1, 1A2)	
	Reconstituted wood (4F)				
	Steel (4A)				

Packing Instruction 679

Cargo aircraft only for UN 1700, 2016 and 2017 only

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OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>
Aluminium (4B)	Aluminium (<u>1B1</u> , 1B2)
Fibreboard (4G)	Fibre (1G)
Natural wood (4C1, 4C2)	Other metal (<u>1N1</u> , 1N2)
<u>Other metal (4N)</u>	Plastics (<u>1H1</u> , 1H2)
Plastics (4H2)	Plywood (1D)
Plywood (4D)	Steel (<u>1A1</u> , 1A2)
Reconstituted wood (4F)	
Steel (4A)	

Packing Instruction 680

Passenger and cargo aircraft for UN 1888 only

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DGP/23-WP/3, paragraph 3.2.25:

ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

- 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.

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	Aluminium (<u>1B1</u> , 1B2)	Aluminium (<u>3B1</u> , 3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (<u>3H1</u> , 3H2)
Natural wood (4C1, 4C2)	Other metal (<u>1N1</u> , 1N2)	Steel (<u>3A1</u> , 3A2)
<u>Other metal (4N)</u>	Plastics (<u>1H1</u> , 1H2)	
Plastics (4H1, 4H2)	Steel (<u>1A1</u> , 1A2)	
Plywood (4D)		
Reconstituted wood (4F)		
Steel (4A)		
...		

Packing Instruction Y680

Limited quantities
 Passenger and cargo aircraft for UN 1888 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Other metal	Steel
<u>Other metal</u>	Plastics	
Plastics	Steel	
Plywood		
Reconstituted wood		
Steel		

Packing Instruction 681

Passenger and ~~e~~Cargo aircraft only for Chlorosilanes

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OUTER PACKAGINGS OF COMBINATION PACKAGINGS

<i>Boxes</i>	<i>Drums</i>
Fibreboard (4G)	Fibre (1G)
Natural wood (4C1, 4C2)	Plastics (<u>1H1</u> , 1H2)
Plastics (4H1, 4H2)	Plywood (1D)
Plywood (4D)	Steel (<u>1A1</u> , 1A2)
Reconstituted wood (4F)	
Steel (4A)	
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Chapter 10

CLASS 8 — CORROSIVE SUBSTANCES

~~Note. Class 8 packing instructions have been replaced with the reformatted packing instructions which appeared in Attachment 4 of the 2009-2010 Edition. Further modifications to these packing instructions are indicated with the customary margin symbols.~~

10.1 PACKING INSTRUCTIONS

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Corrigendum to UN Model Regulations
(Seventeenth revised Edition)
ST/SG/AC.20/1/Rev.17/Corr.1:

Packing Instructions Y840 – Y841

Limited quantities
Passenger and cargo aircraft

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium
Fibreboard
Natural wood
Other metal
Plastics
Plywood
Reconstituted wood
Steel

Drums

Aluminium
Fibre
Other metal
Plastics
Steel

Jerricans

Aluminium
Plastics
Steel

Packing Instructions Y843 – Y845

Limited quantities
Passenger and cargo aircraft

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium
Fibreboard
Natural wood
Other metal
Plastics
Plywood
Reconstituted wood
Steel

Drums

Aluminium
Fibre
Other metal
Plastics
Steel

Jerricans

Aluminium
Plastics
Steel

Packing Instructions 850 – 852

Passenger aircraft

ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

Packing Group I

DGP/23-WP/3, paragraph 3.2.25:

- 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.

Packing Group III

- Packagings must meet the Packing Group II performance requirements.

DGP/23-WP/3, paragraph 3.2.23 and
Corrigendum to UN Model Regulations
(Seventeenth revised Edition)
ST/SG/AC.20/1/Rev.17/Corr.1:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

DGP/23-WP/3, paragraph 3.2.23:

Packing Instructions 854 – 856

Cargo aircraft only

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ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

Packing Group I

DGP/23-WP/3, paragraph 3.2.25:

- 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.

Packing Group III

- Packagings must meet the Packing Group II performance requirements.

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
 Fibreboard (4G)
 Natural wood (4C1, 4C2)
Other metal (4N)
 Plastics (4H1, 4H2)
 Plywood (4D)
 Reconstituted wood (4F)
 Steel (4A)

Drums

Aluminium (1B1, 1B2)
 Fibre (1G)
 Other metal (1N1, 1N2)
 Plastics (1H1, 1H2)
 Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
 Plastics (3H1, 3H2)
 Steel (3A1, 3A2)

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Packing Instructions 858 – 860

Passenger aircraft

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OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
 Fibreboard (4G)
 Natural wood (4C1, 4C2)
Other metal (4N)
 Plastics (4H1, 4H2)
 Plywood (4D)
 Reconstituted wood (4F)
 Steel (4A)

Drums

Aluminium (1B1, 1B2)
 Fibre (1G)
 Other metal (1N1, 1N2)
 Plastics (1H1, 1H2)
 Plywood (1D)
 Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
 Plastics (3H1, 3H2)
 Steel (3A1, 3A2)

Packing Instructions 862 – 864

Cargo aircraft only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	Aluminium (<u>1B1</u> , 1B2)	Aluminium (<u>3B1</u> , 3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (<u>3H1</u> , 3H2)
Natural wood (4C1, 4C2)	Other metal (<u>1N1</u> , 1N2)	Steel (<u>3A1</u> , 3A2)
<u>Other metal (4N)</u>	Plastics (<u>1H1</u> , 1H2)	
Plastics (4H1, 4H2)	Plywood (1D)	
Plywood (4D)	Steel (<u>1A1</u> , 1A2)	
Reconstituted wood (4F)		
Steel (4A)		

ADDITIONAL PACKING REQUIREMENTS FOR SINGLE PACKAGINGS

— Fibre, wood and plywood single packagings must be fitted with a suitable liner.

SINGLE PACKAGINGS FOR PACKING GROUP I

<i>Composites</i>	<i>Cylinders</i>	<i>Drums</i>	<i>Jerricans</i>
All (see 6;3.1.18)	See 4;2.7	Aluminium (1B1, 1B2)	Aluminium (3B1, 3B2)
		Fibre (1G)	Plastics (3H1, 3H2)
		Plastics (1H1, 1H2)	Steel (3A1, 3A2)
		Plywood (1D)	
		Steel (1A1, 1A2)	

SINGLE PACKAGINGS FOR PACKING GROUPS II AND III ONLY

<i>Boxes</i>	<i>Composites</i>	<i>Cylinders</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	All (see 6;3.1.18)	See 4;2.7	Aluminium (1B1, 1B2)	Aluminium (3B1, 3B2)
Fibreboard (4G)			Fibre (1G)	Plastics (3H1, 3H2)
Natural wood (4C2)			Plastics (1H1, 1H2)	Steel (3A1, 3A2)
<u>Other metal (4N)</u>			Plywood (1D)	
Plastics (4H2)			Steel (1A1, 1A2)	
Plywood (4D)				
Reconstituted wood (4F)				
Steel (4A)				

Packing Instruction 866

Cargo aircraft only for UN 2028 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>
Aluminium (4B)	Aluminium (1B2)
Fibreboard (4G)	Fibre (1G)
Natural wood (4C1, 4C2)	Other metal (1N2)
<u>Other metal (4N)</u>	Plastics (1H2)
Plastics (4H1, 4H2)	Steel (1A2)
Plywood (4D)	
Reconstituted wood (4F)	
Steel (4A)	

Packing Instruction 867

Passenger and cargo aircraft for UN 2803 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

~~Aluminium (1B2)~~
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

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Packing Instruction 868

Passenger and cargo aircraft for UN 2809 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

~~Aluminium (1B2)~~
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

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Packing Instruction 869

Passenger and cargo aircraft for UN ~~2809~~ 3506 contained in manufactured articles only

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DGP/23-WP/3, paragraph 3.2.12 and 3.2.29:

Packing Instruction 870

Passenger and cargo aircraft for UN 2794 and 2795 only

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COMBINATION PACKAGINGS					SINGLE PACKAGINGS
UN number and proper shipping name	Packing conditions	Total quantity per package — passenger	Total quantity per package — cargo		
UN 2794 Batteries, wet, filled with acid UN 2795 Batteries, wet, filled with alkali	<p>Batteries must be placed in an acid/alkali-proof liner of sufficient strength and adequately sealed to positively preclude leakage in the event of spillage. The batteries must be packed so that the fill openings and vents, if any, are upward; they must be incapable of short-circuiting and be securely cushioned in the packagings. <u>The upright position of the package must be indicated on it by "Package orientation" labels (Figure 5-26) as required by 5.3. The words "This side up" or "This end up" may also be displayed on the top of the package.</u></p> <p><i>Batteries installed in equipment</i></p> <p>If batteries are shipped as an integral component of assembled equipment, they must be securely installed and fastened in an upright position and protected against contact with other articles so as to prevent short circuits. Batteries must be removed and packed according to this packing instruction if the assembled equipment is likely to be carried in other than an upright position.</p>	30 kg ☹	No limit	Unpackaged batteries No	

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Packing Instruction 871

Passenger and cargo aircraft for UN 3028 only

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COMBINATION PACKAGINGS				SINGLE PACKAGINGS
UN number and proper shipping name	Packing conditions	Total quantity per package — passenger	Total quantity per package — cargo	
UN 3028 Batteries, dry, containing potassium hydroxide solid	The batteries must be securely cushioned in the packagings.	25 kg ☹	230 kg ☹	No

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DGP/23-WP/3, paragraph 3.2.23:

Packing Instruction 873
Passenger and cargo aircraft for UN 3477

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OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium(4B)	Aluminium(1B2)	Aluminium (3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (3H2)
Natural wood (4C1, 4C2)	Other metal (1N2)	Steel (3A2)
<u>Other metal (4N)</u>	Plastics (1H2)	
Plastics (4H2)	Plywood (1D)	
Plywood (4D)	Steel (1A2)	
Reconstituted wood (4F)		
Steel (4A)		

Packing Instruction Y873
Limited quantities for UN 3477 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Other metal	Steel
<u>Other metal</u>	Plastics	
Plastics	Plywood	
Plywood	Steel	
Reconstituted wood		
Steel		

DGP/23-WP/3, paragraph 3.2.24:

Packing Instruction 874
Passenger and cargo aircraft for UN 3477 (contained in equipment) only

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ADDITIONAL PACKING REQUIREMENTS

- Fuel cell cartridges that are contained in equipment must be protected against short circuit and the equipment must be protected against inadvertent operation.
- Equipment must be securely cushioned in the outer packagings.
- The mass of each fuel cell cartridge must not exceed 1 kg.
- Fuel cell systems must not charge batteries during transport.
- On passenger aircraft, each fuel cell system and each fuel cell cartridge must conform to IEC [PAS 62282-6-1 62282-6-100](#) Ed. 1 or a standard approved by the appropriate authority of the State of Origin.

...

...

DGP/23-WP/3, paragraph 3.2.23:

Packing Instruction 876			
Cargo aircraft only for Chlorosilanes			
...			
OUTER PACKAGINGS OF COMBINATION PACKAGINGS			
<i>Boxes</i>	<i>Drums</i>		
Fibreboard (4G)	Fibre (1G)		
Natural wood (4C1, 4C2)	Plastics (<u>1H1</u> , 1H2)		
Plastics (4H1, 4H2)	Plywood (1D)		
Plywood (4D)	Steel (<u>1A1</u> , 1A2)		
Reconstituted wood (4F)			
Steel (4A)			
SINGLE PACKAGINGS FOR CARGO AIRCRAFT ONLY			
<i>Composites</i>	<i>Cylinders</i>	<i>Drums</i>	<i>Jerricans</i>
Plastic receptacle in steel drum (6HA1)	Steel (as permitted by 4;2.7)	Steel (1A1)	Steel (3A1)

Chapter 11

CLASS 9 — MISCELLANEOUS DANGEROUS GOODS

~~Note. — Class 9 packing instructions have been replaced with the reformatted packing instructions which appeared in Attachment 4 of the 2009-2010 Edition. Further modifications to these packing instructions are indicated with the customary margin symbols.~~

...

DGP/23-WP/2, paragraph 3.2.18:

Packing Instruction 954	
Passenger and cargo aircraft for UN 1845 only	
...	
c)	the dangerous goods transport document requirements of 5;4 are not applicable provided alternative written documentation is provided describing the contents. <u>The information on the document must be shown in the location provided for the description of the goods.</u> Where an agreement exists with the operator, the shipper may provide the information by electronic data processing (EDP) or electronic data interchange (EDI) techniques. The information required is as follows and should be shown in the following order:
1)	UN 1845;
2)	Carbon dioxide, solid or Dry ice ;
3)	the number of packages and the net quantity of dry ice in each package; <u>and</u>
d)	the net mass of the Carbon dioxide, solid or Dry ice must be marked on the outside of the package; and
e)	the information must be included with the description of the goods.
...	

...

Packing Instruction 956

Passenger and cargo aircraft for UN 1841, UN 1931, UN 3432, UN 2969, UN 3077, UN 3152 and UN 3335 only

...

DGP/23-WP/3, paragraph 3.2.11:

COMBINATION PACKAGINGS					SINGLE PACKAGINGS	
UN number and proper shipping name	Inner packaging (see 6;3.2)	Inner packaging quantity (per receptacle)	Total quantity per package — passenger	Total quantity per package — cargo	Quantity — passenger	Quantity — cargo
...						
UN 3335 Aviation regulated solid, n.o.s.	Glass	10.0 kg	100 kg 400 kg	200 kg 400 kg	100 kg 400 kg	200 kg 400 kg
	Fibre	50.0 kg				
	Metal	50.0 kg				
	Paper bag	50.0 kg				
	Plastics	50.0 kg				
	Plastic bag	50.0 kg				
...						

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

ADDITIONAL PACKING REQUIREMENTS FOR SINGLE PACKAGINGS

— Fibre, wood and plywood single packagings must be fitted with a suitable liner.

SINGLE PACKAGINGS

Bags

Paper (5M2)
Plastic film (5H4)
Textile (5L3)
Woven plastics (5H3)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C2)
Other metal (4N)
Plastics (4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Composites

All (see 6;3.1.18)

Cylinders

See 4;2.7

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Plywood (1D)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

...

Packing Instruction Y956

Limited quantities
Passenger and cargo aircraft for UN 3077 and UN 3335 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Other metal	Steel
<u>Other metal (4N)</u>	Plastics	
Plastics	Steel	
Plywood		
Reconstituted wood		
Steel		

Packing Instruction 957

Passenger and cargo aircraft for UN 2211 and UN 3314 only

...

SINGLE PACKAGINGS

<i>Boxes</i>	<i>Drums</i>
Fibreboard (4G)	Aluminium (1AB1, 1B2)
<u>Other metal (4N)</u>	
Plywood (4D)	Fibre (1G)
Reconstituted wood (4F)	Plywood (1D)
Wooden (4C1, 4C2)	Steel (1A1, 1A2)

Packing Instruction 958

Passenger and cargo aircraft for UN 2071 and UN 2590 only

...

SINGLE PACKAGINGS

<i>Bags</i>	<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Plastics (5H4)	Fibreboard (4G)	Aluminium (1B2)	Plastics (3H2)
Textile(5L3)	Natural wood (4C2)	Fibre (1G)	Steel (3A2)
	<u>Other metal (4N)</u>	Plastics (1H2)	
Woven plastics (5H3)	Plastics (4H1, 4H2)	Plywood (1D)	
	Plywood (4D)	Steel (1A2)	
	Reconstituted wood (4F)		

Packing Instruction Y958
 Limited quantities
 Passenger and cargo aircraft

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium	Aluminium	Aluminium
Fibreboard	Fibre	Plastics
Natural wood	Other metal	Steel
<u>Other metal</u>	Plastics	
Plastics	Steel	
Plywood		
Reconstituted wood		
Steel		

...

Packing Instruction 960
 Passenger and cargo aircraft for UN 3316 only

...

DGP/23-WP/3, paragraph 3.2.15:

ADDITIONAL PACKING REQUIREMENTS

- Kits may contain dangerous goods which require segregation according to Table 7-1.
- Packagings must meet the performance standards of the most stringent packing group assigned to any individual substance contained in the kit. Where the kit contains dangerous goods to which no packing group is assigned, packagings must meet Packing Group II performance standards.
- Kits must not be packed with other dangerous goods in the same outer packaging, with the exception of dry ice. If dry ice is used, the requirements in Packing Instruction 954 must be met.

...

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
 Fibreboard (4G)
 Natural wood (4C1, 4C2)
Other metal (4N)
 Plastics (4H1, 4H2)
 Plywood (4D)
 Reconstituted wood (4F)
 Steel (4A)

Packing Instruction Y960

Limited quantities
Passenger and cargo aircraft for UN 3316 only

...

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Fibreboard
Natural wood
~~Other metal~~
Plastics
Plywood
Reconstituted wood

Packing Instruction 961

Passenger and cargo aircraft for UN 3268 only

...

Corrigendum to UN Model Regulations
(Seventeenth revised Edition)
ST/SG/AC.20/1/Rev.17/Corr.1::

ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS

- Packagings must meet the Packing Group III performance requirements.
- The packagings must be designed and constructed to prevent movement of the articles and inadvertent operation during normal conditions of transport.
- Any pressure ~~vessel~~ receptacle must be in accordance with the requirements of the appropriate national authority for the substance(s) contained ~~in the pressure vessel(s) therein~~.

...

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (~~4C1~~, 4C2)
~~Other metal (4N)~~
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (~~4N~~ 1N2)
Plastics (1H2)
Plywood (1D)
Steel (1A2)

Jerricans

Aluminium (3B2)
~~Other metal (3N2)~~
Plastics (3H2)
Steel (3A2)

...

Packing Instruction Y963

Passenger and cargo aircraft for ID 8000 only

Consumer commodities are materials that are packaged and distributed in a form intended or suitable for retail sale for the purposes of personal care or household use. These include items administered or sold to patients by doctors or medical administrations. Except as otherwise provided below, dangerous goods packed in accordance with this packing instruction do not need to comply with 4;1 or Part 6 of these Instructions; they must, however, comply with all other applicable requirements.

...

m) Packages prepared in accordance with these provisions must be durably and legibly marked with the mark shown in Figure 3-1.

~~Note. Packages prepared for transport before 31 December 2010 using Packing Instruction 910 in the 2009-2010 Edition of these Instructions may be presented for transport until 31 March 2011 without the mark shown in Figure 3-1.~~

Packing Instruction 964

Passenger and cargo aircraft for UN 1941, UN 1990, UN 2315, UN 3151, UN 3082 and UN 3334 only

...

DGP/23-WP/3, paragraph 3.2.11:

UN number and proper shipping name	COMBINATION PACKAGINGS			SINGLE PACKAGINGS		
	Inner packaging (see 6;3.2)	Inner packaging quantity (per receptacle)	Total quantity per package — passenger	Total quantity per package — cargo	Passenger	Cargo
...						
UN 3334 Aviation regulated liquid, n.o.s.	Glass	10.0 L	No Limit <u>450 L</u>	No Limit <u>450 L</u>	No Limit <u>450 L</u>	No Limit <u>450 L</u>
	Plastics	30.0 L				
	Metal	40.0 L				

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B1, 1B2)
Fibre (1G)
Other metal (1N1, 1N2)
Plastics (1H1, 1H2)
Steel (1A1, 1A2)

Jerricans

Aluminium (3B1, 3B2)
Other metal (3N2)
Plastics (3H1, 3H2)
Steel (3A1, 3A2)

SINGLE PACKAGINGS			
<i>Composites</i>	<i>Cylinders</i>	<i>Drums</i>	<i>Jerricans</i>
All (see 6;3.1.18)	See 4;2.7	Aluminium (1B1, 1B2) Other metal (1N1, 1N2) Plastics (1H1, 1H2) Steel (1A1, 1A2)	Aluminium (3B1, 3B2) Plastics (3H1, 3H2) Steel (3A1, 3A2)

Packing Instruction Y964		
Limited quantities Passenger and cargo aircraft for UN 1941, UN 1990, UN 3082 and UN 3334 only		
...		
OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)		
<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium Fibreboard Natural wood <u>Other metal</u> Plastics Plywood Reconstituted wood Steel	Aluminium Fibre Other metal Plastics Steel	Aluminium Plastics Steel

Packing Instruction 965		
Passenger and cargo aircraft for UN 3480		
SECTION I		
...		
<hr/> DGP/23-WP/3, paragraph 3.2.12: <hr/>		
<i>Contents</i>	<i>Package quantity (Section I)</i>	
	<i>Passenger</i>	<i>Cargo</i>
Lithium ion cells and batteries	5 kg	35 kg

<hr/> DGP/23-WP/3, paragraph 3.2.23: <hr/>		
ADDITIONAL PACKING REQUIREMENTS		
<ul style="list-style-type: none"> — Lithium ion cells and batteries must be protected against short circuits. — Lithium ion cells and batteries must be placed in inner packagings that completely enclose the cell or battery then placed in an outer packaging. The completed package for the cells or batteries must meet the Packing Group II performance requirements. — Lithium ion batteries with a mass of 12 kg or greater and having a strong, impact-resistant outer casing, or assemblies of such batteries, may be transported when packed in strong outer packagings or in protective enclosures <u>(e.g. in fully enclosed or wooden slatted crates)</u> not subject to the requirements of Part 6 of these Instructions, if approved by the appropriate authority of the State of Origin. A copy of the document of approval must accompany the consignment. — Batteries manufactured after 31 December 2011 must be marked with the Watt-hour rating on the outside case. 		

OUTER PACKAGINGS

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (1N1)
Plastics (1H2)
Plywood (1D)
Steel (1A2)

Jerricans

Aluminium (3B2)
Plastics (3H2)
Steel (3A2)

DGP/23-WP/3, paragraph 3.2.31:

SECTION II

With the exception of Part 1:2.3 (Transport of dangerous goods by post), 7:4.4 (Reporting of dangerous goods accidents and incidents) and 8:1.1 (Provisions for dangerous goods carried by passengers or crew), lithium ion cells and batteries offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section.

Lithium ion cells and batteries may be offered for transport if they meet the following:

- 1) for lithium ion cells, the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh;
- 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh;
 - the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, section 38.3.

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

...

Packing Instruction 966

Passenger and cargo aircraft for UN 3481 (packed with equipment) only

...

SECTION I

...

General requirements

Part 4:1 requirements must be met.

DGP/23-WP/3, paragraph 3.2.14:

<i>Contents</i> <u>UN Number and Name</u>	<i>Package quantity</i> <i>(Section I)</i>	
	<i>Passenger</i>	<i>Cargo</i>
Quantity of lithium ion cells and batteries per package, excluding equipment <u>UN 3481 Lithium ion batteries packed with equipment</u>	<u>5 kg of lithium ion cells or batteries</u>	<u>35 kg of lithium ion cells or batteries</u>

...

DGP/23-WP/3, paragraph 3.2.31:

SECTION II

With the exception of Part 1:2.3 (Transport of dangerous goods by post), 7:4.4 (Reporting of dangerous goods accidents and incidents) and 8:1.1 (Provisions for dangerous goods carried by passengers or crew), Lithium ion cells and batteries packed with equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section.

Lithium ion cells and batteries may be offered for transport if they meet the following:

- 1) for lithium ion cells, the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh;
- 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh;
 - the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the *UN Manual of Tests and Criteria*, Part III, section 38.3.

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

...

Packing Instruction 967

Passenger and cargo aircraft for UN 3481 (contained in equipment) only

...

SECTION I

...

General requirements

Equipment must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.9 (except 1.1.9.1).

DGP/23-WP/3, paragraph 3.2.14:

<i>Contents</i> <u>UN Number and Name</u>	<i>Not quantity per piece of equipment—Package quantity (Section I)</i>	
	<i>Passenger</i>	<i>Cargo</i>
<u>UN 3481 Lithium ion batteries contained in equipment</u>	<u>5 kg of lithium ion cells or batteries</u>	<u>35 kg of lithium ion cells or batteries</u>

...

DGP/23-WP/3, paragraph 3.2.31:

SECTION II

With the exception of Part 1:2.3 (Transport of dangerous goods by post), 7:4.4 (Reporting of dangerous goods accidents and incidents) and 8:1.1 (Provisions for dangerous goods carried by passengers or crew), Lithium ion cells and batteries contained in equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section.

Lithium ion cells and batteries may be offered for transport if they meet the following:

- 1) for lithium ion cells ,the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh;

- 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh;
 - the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, section 38.3.

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

Devices such as radio frequency identification (RFID) tags, watches and temperature loggers, which are not capable of generating a dangerous evolution of heat, may be transported when intentionally active. When active, these devices must meet defined standards for electromagnetic radiation to ensure that the operation of the device does not interfere with aircraft systems.

...

Packing Instruction 968

Passenger and cargo aircraft for UN 3090

...

SECTION I

...

DGP/23-WP/3, paragraph 3.2.12:

Contents	Package quantity (Section I)	
	Passenger	Cargo
Lithium metal cells and batteries	2.5 kg ☹	35 kg ☹

...

DGP/23-WP/3, paragraph 3.2.23:

OUTER PACKAGINGS

Boxes

Aluminium (4B)
 Fibreboard (4G)
 Natural wood (4C1, 4C2)
 Other metal (4N)
 Plastics (4H2)
 Plywood (4D)
 Reconstituted wood (4F)
 Steel (4A)

Drums

Aluminium (1B2)
 Fibre (1G)
 Other metal (1N)
 Plastics (1H2)
 Plywood (1D)
 Steel (1A2)

Jerricans

Aluminium (3B2)
 Plastics (3H2)
 Steel (3A2)

DGP/23-WP/3, paragraph 3.2.31:

SECTION II

With the exception of Part 1:2.3 (Transport of dangerous goods by post), 7:4.4 (Reporting of dangerous goods accidents and incidents) and 8:1.1 (Provisions for dangerous goods carried by passengers or crew), lithium metal or lithium alloy cells and batteries offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section.

...

Packing Instruction 969

Passenger and cargo aircraft for UN 3091 (packed with equipment) only

...

SECTION I

...

General requirements

Part 4;1 requirements must be met.

DGP/23-WP/3, paragraph 3.2.14:

<i>Contents</i> <i>UN Number and Name</i>	<i>Package quantity</i> <i>(Section I)</i>	
	<i>Passenger</i>	<i>Cargo</i>
Quantity of lithium metal cells and batteries per overpack, excluding equipment <u>UN 3091 Lithium metal batteries packed with equipment</u>	5 kg of lithium metal cells or batteries	35 kg of lithium metal cells or batteries

...

DGP/23-WP/3, paragraph 3.2.31:

SECTION II

With the exception of Part 1;2.3 (Transport of dangerous goods by post), 7;4.4 (Reporting of dangerous goods accidents and incidents) and 8;1.1 (Provisions for dangerous goods carried by passengers or crew), lithium metal cells and batteries packed with equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section.

...

Packing Instruction 970

Passenger and cargo aircraft for UN 3091 (contained in equipment) only

...

SECTION I

...

General requirements

Equipment must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

DGP/23-WP/3, paragraph 3.2.14:

<i>Package contents</i> <u>UN Number and Name</u>	<i>Net quantity per piece of equipment. Package quantity (Section I)</i>	
	<i>Passenger</i>	<i>Cargo</i>
<i>Lithium metal batteries</i> <u>UN 3091 Lithium metal batteries contained in equipment</u>	<u>5 kg of lithium metal cells or batteries</u>	<u>35 kg of lithium metal cells or batteries</u>

...

DGP/23-WP/3, paragraph 3.2.31:

SECTION II

With the exception of Part 1:2.3 (Transport of dangerous goods by post), 7:4.4 (Reporting of dangerous goods accidents and incidents) and 8:1.1 (Provisions for dangerous goods carried by passengers or crew), lithium metal cells and batteries contained in equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section.

...

DGP/23-WP/3, paragraph 3.2.23.1 a):

Packing Instruction 971

Passenger and cargo aircraft for UN 3499 only (see also Special Provision A186)

General requirements

Part 4:1.1.1 and 1.1.8 requirements must be met.

For the purpose of this packaging instruction, a capacitor is considered an inner packaging.

<u>UN number and proper shipping name</u>	<u>Quantity — passenger</u>	<u>Quantity — cargo</u>
UN 3499 Capacitor , electric double layer	<u>No limit</u>	<u>No limit</u>

ADDITIONAL PACKING REQUIREMENTS

- Each capacitor must be transported in an uncharged state. The capacitor or, when fitted in a module, the module must be fitted with a metal strap connecting the terminals.
- Capacitors must be securely cushioned in the outer packagings.

OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6:3.1)

Boxes

Drums

Jerricans

Strong outer packagings

— END —