



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)  
MEETING OF THE WORKING GROUP OF THE WHOLE**

**Rio de Janeiro, Brazil, 20 to 24 October 2014**

**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 2017-2018 Edition**

**2.4: Part 4 — Packing Instructions**

**PERMITTED OUTER PACKAGINGS OF COMBINATION PACKAGINGS**

(Presented by D. Brennan)

**SUMMARY**

This working paper proposes that the DGP-WG reconsider the inclusion of closed head drums and jerricans as outer packagings of combination packagings in the packing instructions.

**Action by the DGP-WG:** The DGP-WG is invited to consider the revisions shown in Appendix A to this working paper.

**1. INTRODUCTION**

1.1 Based on changes adopted by the UN Subcommittee, the 17<sup>th</sup> revised edition of the UN Model Regulations included significant changes to the types of outer packagings of combination packagings to include closed head drums and jerricans (1A1, 1B1, 1H1, 1N1, 3A1, 3B1 and 3H1).

1.2 The changes to the 17<sup>th</sup> revised edition of the UN Model Regulations were consequently adopted into the 2013-2014 edition of the Technical Instructions.

1.3 The inclusion of closed head drums and jerricans as outer packagings of combination packagings by the UN Subcommittee was based on a proposal by the Expert from Germany to address very small drums with a diameter of less than 7 cm. In this case the opening of the drum or jerrican is less than 7 cm, which by virtue of the description in Part 6;3.1.1.5, 6;3.1.2.4, 6;3.1.3.4, 6;3.1.4.3 and 6;3.1.7.5 means that these small packagings are considered as “closed head”, a copy of the original paper from the Expert from Germany is attached as Appendix B.

1.4 The result of the adoption of this proposal is that most packing instructions in the Technical Instructions were revised to include closed head drums and jerricans as outer packagings of combination packagings.

1.5 The effect of this has been quite an amount of confusion on the part of acceptance staff as to how UN specification packagings with very small openings can be used as the outer packaging for a packing instruction that specifically states that single packagings are not permitted i.e. that the dangerous goods must first be packed in an inner packaging, the inner packagings then being packed in the outer packaging.

1.6 Of greater concern is the potential for shippers to present solids in closed head single packagings for carriage on passenger aircraft where the packing instruction does not permit the use of single packagings. The person performing the acceptance check would see that the packing instruction permits the use of a 1A1 for example and would therefore believe that the 1A1 presented for transport is acceptable, notwithstanding that the packing instruction specifically precludes the use of single packagings, see Packing Instructions 483 – 486 for passenger aircraft.

1.7 Based on this it is proposed to remove the closed head packagings from the outer packagings tables for combination packagings.

## 2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to revise the packing instructions as shown in Appendix A to this working paper.

-----

APPENDIX A

PROPOSED AMENDMENT TO PART 4 OF THE TECHNICAL INSTRUCTIONS

...

Part 4

PACKING INSTRUCTIONS

...

Chapter 3

CLASS 1 — EXPLOSIVES

Parts of this Chapter are affected by State Variation BE 2, DK 2, HR 5;  
see Table A-1

...

3.4 PACKING INSTRUCTIONS

Packing Instruction 114		
<b>a) solid wetted</b>		
<i>Inner packagings</i>	<i>Intermediate packagings</i>	<i>Outer packagings</i>
Bags plastics textile woven plastics	Bags plastics textile, plastic coated or lined	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)
Receptacles metal plastics wood	Receptacles metal plastics Dividing partitions wood	Drums aluminium ( <del>1B1</del> , 1B2) fibre (1G) other metal ( <del>1N1</del> , 1N2) plastics ( <del>1H1</del> , 1H2) plywood (1D) steel ( <del>1A1</del> , 1A2)
<b>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</b>		
<ul style="list-style-type: none"> <li>— For UN 0077, 0234, 0235 and 0236, packagings must be lead-free.</li> <li>— For UN 0342, inner packagings are not required when metal (1A1, 1A2, <del>1B1</del>, 1B2, <del>1N1</del> or 1N2) or plastic (<del>1H1</del> or 1H2) drums are used as outer packagings.</li> <li>— Intermediate packagings are not required if leakproof removable head drums are used as the outer packaging.</li> </ul>		
<b>b) solid dry</b>		
<i>Inner packagings</i>	<i>Intermediate packagings</i>	<i>Outer packagings</i>
Bags paper, kraft plastics textile, siftproof	Not necessary	Boxes fibreboard (4G) natural wood, ordinary (4C1) natural wood, with siftproof walls (4C2)

<p>woven plastics, siftproof</p> <p>Receptacles</p> <p>fibreboard</p> <p>metal</p> <p>paper</p> <p>plastics</p> <p>wood</p> <p>woven plastics, siftproof</p>	<p>plywood (4D)</p> <p>reconstituted wood (4F)</p> <p>Drums</p> <p>aluminium (<del>4B1</del>, 1B2)</p> <p>fibre (1G)</p> <p>other metal (<del>4N1</del>, 1N2)</p> <p>plastics (<del>4H1</del>, 1H2)</p> <p>plywood (1D)</p> <p>steel (<del>4A1</del>, 1A2)</p>
<p><b>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</b></p> <ul style="list-style-type: none"> <li>— For UN 0077, 0132, 0234, 0235 and 0236, packagings must be lead-free.</li> <li>— For UN 0508 and 0509, metal packagings must not be used.</li> <li>— For UN 0160 and 0161, when metal drums (<del>4A1</del>, 1A2, <del>4B1</del>, 1B2, <del>4N1</del> 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.</li> <li>— For UN 0160 and 0161, inner packagings are not required if drums are used as the outer packaging.</li> </ul>	

<b>Packing Instruction 130</b>		
<i>Inner packagings</i>	<i>Intermediate packagings</i>	<i>Outer packagings</i>
<p>Not necessary</p>           <p>...</p>	<p>Not necessary</p>	<p>Boxes</p> <p>aluminium (4B)</p> <p>expanded plastics (4H1)</p> <p>fibreboard (4G)</p> <p>natural wood, ordinary (4C1)</p> <p>natural wood, with siftproof walls (4C2)</p> <p>other metal (4N)</p> <p>plywood (4D)</p> <p>reconstituted wood (4F)</p> <p>solid plastics (4H2)</p> <p>steel (4A)</p> <p>Drums</p> <p>aluminium (<del>4B1</del>, 1B2)</p> <p>fibre (1G)</p> <p>other metal (<del>4N1</del>, 1N2)</p> <p>plastics (<del>4H1</del>, 1H2)</p> <p>plywood (1D)</p> <p>steel (<del>4A1</del>, 1A2)</p>

## 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)  
 + plastics, solid (4H2)  
 plywood (4D)  
 reconstituted wood (4F)  
 steel (4A)  
 Drums  
 aluminium (4B1, 1B2)  
 fibre (1G)  
 plastics (4H1, 1H2)  
 other metal (4N1, 1N2)  
 plywood (1D)  
 steel (4A1, 1A2)

**PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:**

— For UN 0029, 0267 and 0455, bags and reels 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 (4B1, 1B2)  
 fibre (1G)  
 plastics (4H1, 1H2)  
 other metal (4N1, 1N2)  
 plywood (1D)  
 steel (4A1, 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 (4B1, 1B2)
  - fibre (1G)
  - other metal (4N1, 1N2)
  - plastics (4H1, 1H2)
  - plywood (1D)
  - steel (4A1, 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 (4B1, 1B2)
  - fibre (1G)
  - other metal (4N1, 1N2)
  - plastics (4H1, 1H2)
  - plywood (1D)
  - steel (4A1, 1A2)

### 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 (4B1, 1B2)  
fibre (1G)  
other metal (4N1, 1N2)  
plastics (4H1, 1H2)  
plywood (1D)  
steel (4A1, 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 (4B1, 1B2)  
fibre (1G)  
other metal (4N1, 1N2)  
plastics (4H1, 1H2)  
plywood (1D)  
steel (4A1, 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 (~~4B1~~, 1B2)  
  fibre (1G)  
  other metal (~~4N1~~, 1N2)  
  plastics (~~4H1~~, 1H2)  
  plywood (1D)  
  steel (~~4A1~~, 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, aluminium or other metal boxes or drums must not be used.

### Packing Instruction 141

3.

*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 (~~4B1~~, 1B2)  
  fibre (1G)  
  other metal (~~4N1~~, 1N2)  
  plastics (~~4H1~~, 1H2)  
  plywood (1D)  
  steel (~~4A1~~, 1A2)



## Packing Instruction 142

<i>Inner packagings</i>	<i>Intermediate packagings</i>	<i>Outer packagings</i>
Bags paper plastics Receptacles fibreboard metal plastics wood Sheets paper Trays, fitted with dividing partitions plastics	Not necessary	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 ( <del>4B1</del> , 1B2) fibre (1G) other metal ( <del>4N1</del> , 1N2) plastics ( <del>4H1</del> , 1H2) plywood (1D) steel ( <del>4A1</del> , 1A2)

## Packing Instruction 143

4.

<i>Inner packagings</i>	<i>Intermediate packagings</i>	<i>Outer packagings</i>
Bags paper, kraft plastics textile textile, rubberized Receptacles fibreboard metal plastics wood Trays, fitted with dividing partitions plastics	Not necessary	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 ( <del>4B1</del> , 1B2) fibre (1G) other metal ( <del>4N1</del> , 1N2) plastics ( <del>4H1</del> , 1H2) plywood (1D) steel ( <del>4A1</del> , 1A2)
<b>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</b> <ul style="list-style-type: none"> <li>— 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.</li> <li>— Instead of the above inner and outer packagings, composite packagings (6HH2) (plastic receptacle with outer solid box) may be used.</li> </ul>		

## Chapter 4

### CLASS 2 — GASES

Parts of this Chapter are affected by State Variations CA 10, US 6, US 15; see Table A-1

#### 4.2 PACKING INSTRUCTIONS

##### Packing Instruction 206

Passenger and cargo aircraft for UN 3167, UN 3168 and UN 3169 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (4H1—1H2)  
Steel (~~4A1~~, 1A2)

###### Jerricans

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

## Chapter 5

### CLASS 3 — FLAMMABLE LIQUIDS

#### 5.1 PACKING INSTRUCTIONS

##### Packing Instructions 350 – 355

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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Plywood (1D)  
Steel (~~4A1~~, 1A2)

###### Jerricans

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

...

**Packing Instructions 360 – 366**

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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plywood (1D)  
Plastics (~~4H1~~, 1H2)  
Steel (~~4A1~~, 1A2)

*Jerricans*

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

...

**Packing Instruction 370**

Passenger and cargo aircraft for UN 3269 (Packing Group II or III) 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Steel (~~4A1~~, 1A2)

*Jerricans*

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

**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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Steel (~~4A1~~, 1A2)

*Jerricans*

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

### Packing Instruction 373

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

#### 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (4H1, 1H2)  
Steel (~~4A1~~, 1A2)

*Jerricans*

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

...

### Packing Instruction 377

Cargo aircraft only for Chlorosilanes

...

#### OUTER PACKAGINGS OF COMBINATION PACKAGINGS

*Boxes*

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

...

*Drums*

Fibre (1G)  
Plastics (~~4H1~~, 1H2)  
Plywood (1D)  
Steel (~~4A1~~, 1A2)

## Chapter 6

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

...

## 6.2 PACKING INSTRUCTIONS

## 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Plywood (1D)  
Steel (~~4A1~~, 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Plywood (1D)  
Steel (~~4A1~~, 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 (4H1, 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 (4H1, 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 (4H1, 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)**

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

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

**Packing Instruction 455**

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

**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>
> Fibreboard (4G)	> Fibre (1G)	> Plastics ( <del>3H1</del> , 3H2)
> Natural wood (4C1, 4C2)	> Plastics ( <del>1H1</del> , 1H2)	>
> Plastics (4H1, 4H2)	> Plywood (1D)	
> Plywood (4D)		
> Reconstituted wood (4F)		

...

### Packing Instruction 459

Passenger and cargo aircraft — self-reactive substances

...

#### OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

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

### Packing Instruction 462 – 463

Passenger aircraft

...

#### OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

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

...

### Packing Instruction 464 – 465

Cargo aircraft only

...

#### OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

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

...



**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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Plywood (1D)  
Steel (~~4A1~~, 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Plywood (1D)  
Steel (~~4A1~~, 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 (~~4B1~~, 1B2)  
Steel (~~4A1~~, 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Steel (~~4A1~~, 1A2)

*Jerricans*

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

...

### 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Plywood (1D)  
Steel (~~4A1~~, 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Plywood (1D)  
Steel (~~4A1~~, 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 (~~4B1~~, 1B2)  
Fibre 1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Plywood (1D)  
Steel (~~4A1~~, 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Plywood (1D)  
Steel (~~4A1~~, 1A2)

*Jerricans*

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

...

**Packing Instruction 493**

Passenger aircraft for UN 3399 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Steel (~~4A1~~, 1A2)

*Jerricans*

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

<b>Packing Instruction 494</b>		
Cargo aircraft only for UN 3399		
...		
<b>OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)</b>		
<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	Aluminium ( <del>4B1</del> , 1B2)	Aluminium ( <del>3B1</del> , 3B2)
Fibreboard (4G)	Fibre (1G)	Plastics ( <del>3H1</del> , 3H2)
Natural wood (4C1, 4C2)	Other metal ( <del>4N1</del> , 1N2)	Steel ( <del>3A1</del> , 3A2)
Other metal (4N)	Plastics ( <del>4H1</del> , 1H2)	
Plastics (4H1, 4H2)	Steel ( <del>4A1</del> , 1A2)	
Plywood (4D)		
Reconstituted wood (4F)		
Steel (4A)		
...		

...

## Chapter 7

### CLASS 5 — OXIDIZING SUBSTANCES; ORGANIC PEROXIDES

...

#### 7.2 PACKING INSTRUCTIONS

<b>Packing Instructions 550 – 551</b>	
Passenger aircraft	
...	
<b>OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)</b>	
<i>Boxes</i>	<i>Drums</i>
Aluminium (4B)	Aluminium ( <del>4B1</del> , 1B2)
Fibreboard (4G)	Fibre (1G)
Natural wood (4C1, 4C2)	Other metal ( <del>4N1</del> , 1N2)
Other metal (4N)	Plastics ( <del>4H1</del> , 1H2)
Plastics (4H1, 4H2)	Steel ( <del>4A1</del> , 1A2)
Plywood (4D)	
Reconstituted wood (4F)	
Steel (4A)	

**Packing Instructions 553 – 555**

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 (~~4B1~~, 1B2)  
 Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Steel (~~4A1~~, 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 (~~4B1~~, 1B2)  
 Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Plywood (1D)  
 Steel (~~4A1~~, 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 (~~4B1~~, 1B2)  
 Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Plywood (1D)  
 Steel (~~4A1~~, 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 (~~4B1~~, 1B2)  
 Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Plywood (1D)  
 Steel (~~4A1~~, 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 (~~4B1~~, 1B2)  
 Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Plywood (1D)  
 Steel (~~4A1~~, 1A2)

*Jerricans*

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

...

### Packing Instruction 570

Passenger and cargo aircraft

...

#### 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 (~~4H1~~, 1H2)  
 Plywood (1D)

*Jerricans*

Plastics (~~3H1~~, 3H2)

## Chapter 8

## CLASS 6 — TOXIC AND INFECTIOUS SUBSTANCES

## 8.1 PACKING INSTRUCTIONS

## Packing Instructions 651 – 655

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 (~~4B1~~, 1B2)  
 Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Plywood (1D)  
 Steel (~~4A1~~, 1A2)

*Jerricans*

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

...

## Packing Instructions 657 – 663

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 (~~4B1~~, 1B2)  
 Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Plywood (1D)  
 Steel (~~4A1~~, 1A2)

*Jerricans*

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

...

### Packing Instructions 665 – 670

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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Plywood (1D)  
Steel (~~4A1~~, 1A2)

*Jerricans*

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

...

### Packing Instructions 672 – 677

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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Steel (~~4A1~~, 1A2)

*Jerricans*

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

...



**Packing Instruction 679**

Cargo aircraft only for UN 1700, 2016 and 2017 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 (~~4B1~~, 1B2)  
 Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Plywood (1D)  
 Steel (~~4A1~~, 1A2)

**Packing Instruction 680**

Passenger and cargo aircraft for UN 1888 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 (~~4B1~~, 1B2)  
 Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Steel (~~4A1~~, 1A2)

*Jerricans*

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

**Packing Instruction 681**

Cargo aircraft only for Chlorosilanes

...

**OUTER PACKAGINGS OF COMBINATION PACKAGINGS***Boxes*

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

*Drums*

Fibre (1G)  
 Plastics (~~4H1~~, 1H2)  
 Plywood (1D)  
 Steel (~~4A1~~, 1A2)

...

...

## Chapter 10

# CLASS 8 — CORROSIVE SUBSTANCES

### 10.1 PACKING INSTRUCTIONS

#### Packing Instructions 850 – 852

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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Steel (~~4A1~~, 1A2)

###### *Jerricans*

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

#### Packing Instructions 854 – 856

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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Steel (~~4A1~~, 1A2)

###### *Jerricans*

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

...

**Packing Instructions 858 – 860**

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 (~~4B1~~, 1B2)  
 Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Plywood (1D)  
 Steel (~~4A1~~, 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)***Boxes*

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

*Drums*

Aluminium (~~4B1~~, 1B2)  
 Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Plywood (1D)  
 Steel (~~4A1~~, 1A2)

*Jerricans*

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

...

**Packing Instruction 867**

Passenger and cargo aircraft for UN 2803 only

...

**OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)***Boxes*

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

*Drums*

Fibre (1G)  
 Other metal (~~4N1~~, 1N2)  
 Plastics (~~4H1~~, 1H2)  
 Steel (~~4A1~~, 1A2)

...

### Packing Instruction 868

Passenger and cargo aircraft for UN 2809 only

...

#### OUTER PACKAGINGS OF COMBINATION PACKAGINGS (see 6;3.1)

*Boxes*

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

*Drums*

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

...

...

### Packing Instruction 876

Cargo aircraft only for Chlorosilanes

...

#### OUTER PACKAGINGS OF COMBINATION PACKAGINGS

*Boxes*

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

*Drums*

Fibre (1G)  
Plastics (~~1H1~~, 1H2)  
Plywood (1D)  
Steel (~~1A1~~, 1A2)

...

## Chapter 11

## CLASS 9 — MISCELLANEOUS DANGEROUS GOODS

Parts of this Chapter are affected by State Variation US 2; see Table A-1

...

## Packing Instruction 956

Passenger and cargo aircraft for UN 1841, UN 1931, UN 3432, UN 2969, UN 3077, UN 3152 and UN 3335 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Steel (~~4A1~~, 1A2)

*Jerricans*

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

## Packing Instruction 964

Passenger and cargo aircraft for UN 1941, UN 1990, UN 2315, UN 3151, UN 3082 and UN 3334 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 (~~4B1~~, 1B2)  
Fibre (1G)  
Other metal (~~4N1~~, 1N2)  
Plastics (~~4H1~~, 1H2)  
Steel (~~4A1~~, 1A2)

*Jerricans*

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

...

...

-----



---

**Committee of Experts on the Transport of Dangerous Goods  
and on the Globally Harmonized System of Classification  
and Labelling of Chemicals**

**Sub-Committee of Experts on the Transport of Dangerous Goods**

**Thirty-eighth session**

Geneva, 29 November–7 December 2010

Item 4 of the provisional agenda

**Listing, classification and packing**

**1) Combination packagings – additional outer packagings**

**Transmitted by the expert from Germany<sup>1</sup>**

**2) Introduction**

1. If drums or jerricans are used as outer packagings of combination packagings, drums and jerricans with removable head have to be used. For the transport of dangerous goods in small amounts, small packages are applied. It is possible that the diameter of the drum or the dimensions of the jerrican is less than 70 mm. In this case, the diameter of the maximum opening is less than 70 mm and it is a packaging with a non-removable head. Packagings with a non-removable head are not allowed as outer packagings of a combination packaging. This limitation to drums and jerricans with removable head is not due to safety reasons, but it probably was not realized that there might be a need for such small outer packagings as usually larger amounts of dangerous goods are transported.

2. It is proposed to allow the use of drums and jerricans with non-removable heads as outer packagings of combination packagings in several packing instructions. This will avoid administrative effort caused by approvals on the basis of exemptions.

---

<sup>1</sup>In accordance with the programme of work of the Sub-Committee for 2009-2010 approved by the Committee at its fourth session (refer to ST/SG/AC.10/C.3/68, para. 118 (b) and ST/SG/AC.10/36, para. 14).

### 3) **Proposal**

3. Whenever the codes 1A2, 1B2, 1N2, 1H2, 3A2, 3B2 or 3H2 are indicated for drums or jerricans permitted as outer packagings of combination packagings in the packing instructions of Chapter 4.1, insert the codes 1A1, 1B1, 1N1, 1H1, 3A1, 3B1 or 3H1 as appropriate and delete the words “removable head” if relevant (applies to packing instructions P001, P002, P010, P110(a), P111, P112(a), P112(b), P112(c), P113, P114(a), P114(b), P115, P116, P130, P131, P134, P135, P136, P137, P138, P139, P140, P141, P142, P143, P144, P400, P403, P404, P410, P501, P502, P503, P504, P520, P600, P601, P602, P800, P802 and P804).

— END —