



DANGEROUS GOODS PANEL (DGP)

TWENTY-SECOND MEETING

Montréal, 5 to 16 October 2009

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 2011-2012 Edition

PACKING INSTRUCTIONS FOR CHLOROSILANES

(Presented by CEFIC)

SUMMARY

This working paper proposes to correct an omission in the new packing instructions for chlorosilanes.

Action by the DGP: The DGP is invited to insert the references for the use of steel cylinders in the new packing instructions for chlorosilanes of Classes 3, 6.1 and 8 (see [DGP/22-WP/2](#)) as presented in the appendix, which would become effective in the 2011-2012 Edition of the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284).

1. INTRODUCTION

1.1 At the DGP Working Group of the Whole Meeting in Auckland (DGP-WG09, 4 to 8 May 2009), a proposal to add a reference for the use of cylinders in new packing instructions agreed at DGP-WG08 (The Hague, 3 to 7 November 2008) for chlorosilanes of Classes 3, 6.1 and 8 was made ([DGP/22-WP/2](#), paragraph 3.2.26 and [DGP/22-WP/3](#) paragraph 3.2.13 refer). It was also proposed that the use of cylinders according to 4;2.7 for **Silicon tetrachloride** (UN 1818) should be permitted, as no evidence was found for the need to prohibit cylinders for this entry ([DGP/22-WP/3](#), paragraph 3.2.13).

1.2 The above proposal was agreed, “subject to the placing of the amendment in square brackets, thus allowing further investigation into the present prohibition of UN 1818 in cylinders” ([DGP/22-WP/3](#), paragraph 3.2.13.1).

1.3 CEFIC informed the DGP in New Zealand that a similar proposal would be submitted to the 35th session of the UNSCETDG (Document [ST/SG/AC.10/C.3/2009/25](#) and [UN/SCETDG/35/INF.22](#)). That paper proposed to allow “Steel pressure receptacles” (excluding Aluminium). The proposal was adopted (see [ST/SG/AC.10/C.3/70](#), paragraph 24).

APPENDIX

AMENDMENT TO THE TECHNICAL INSTRUCTIONS

Part 4

PACKING INSTRUCTIONS

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Chapter 5

CLASS 3 — FLAMMABLE LIQUIDS

5.1 PACKING INSTRUCTIONS

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Packing Instruction 377

Passenger and cargo aircraft for Chlorosilanes

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.
- Metal packagings must be corrosion resistant or be protected against corrosion.

2) Closure requirements

- Closures must meet the requirements of 4;1.1.4.

<u>COMBINATION PACKAGINGS</u>						<u>SINGLE PACKAGINGS</u>	
<u>UN number</u>	<u>Inner packaging (see 6.3.2)</u>	<u>Net quantity per inner packaging — passenger</u>	<u>Net quantity per inner packaging — cargo</u>	<u>Total quantity per package — passenger</u>	<u>Total quantity per package — cargo</u>	<u>Passenger</u>	<u>Cargo</u>
<u>UN 1162, UN 1196,</u>	<u>Glass</u>	<u>1.0 L</u>	<u>1.0 L</u>	<u>1.0 L</u>	<u>5.0 L</u>	<u>No</u>	<u>5.0 L</u>
<u>UN 1250, UN 1298,</u>	<u>Plastic</u>	<u>Forbidden</u>	<u>Forbidden</u>				
<u>UN 1305, UN 2985</u>	<u>Steel</u>	<u>1.0 L</u>	<u>5.0 L</u>				

OUTER PACKAGINGS OF COMBINATION PACKAGINGS

Boxes

Fibreboard (4G)
Natural wood (4C1, 4C 2)
Plastic (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Fibre (1G)
Plastic (1H2)
Plywood (1D)
Steel (1A2)

SINGLE PACKAGINGS FOR CARGO AIRCRAFT ONLY

Composites

Plastic receptacle in steel drum (6HA1)

Cylinders

See 4.2.7

Drums

Steel (1A1)

Jerricans

Steel (3A1)

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Chapter 8

CLASS 6 — TOXIC AND INFECTIOUS SUBSTANCES

8.1 PACKING INSTRUCTIONS

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Packing Instruction 681Passenger and cargo aircraft for Chlorosilanes**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.
- Metal packagings must be corrosion resistant or be protected against corrosion.

2) Closure requirements

- Closures must meet the requirements of 4;1.1.4.

<u>COMBINATION PACKAGINGS</u>						<u>SINGLE PACKAGINGS</u>	
<u>UN number</u>	<u>Inner packaging (see 6;3.2)</u>	<u>Net quantity per inner packaging — passenger</u>	<u>Net quantity per inner packaging — cargo</u>	<u>Total quantity per package — passenger</u>	<u>Total quantity per package — cargo</u>	<u>Passenger</u>	<u>Cargo</u>
<u>UN 3361, UN 3362</u>	<u>Glass</u>	<u>1.0 L</u>	<u>1.0 L</u>	<u>1.0 L</u>	<u>30.0 L</u>	<u>No</u>	<u>30.0 L</u>
	<u>Plastic</u>	<u>Forbidden</u>	<u>Forbidden</u>				
	<u>Steel</u>	<u>1.0 L</u>	<u>5.0 L</u>				

OUTER PACKAGINGS OF COMBINATION PACKAGINGSBoxes

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

Drums

Fibre (1G)
Plastic (1H2)
Plywood (1D)
Steel (1A2)

SINGLE PACKAGINGS FOR CARGO AIRCRAFT ONLYCompositesPlastic receptacle in steel drum (6HA1)CylindersSee 4;2.7DrumsSteel (1A1)JerricansSteel (3A1)

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Chapter 10

CLASS 8 — CORROSIVE SUBSTANCES

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Packing Instruction 876

Cargo aircraft only for Chlorosilanes

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.
- Metal packagings must be corrosion resistant or be protected against corrosion.

2) Closure requirements

- Closures must meet the requirements of 4;1.1.4.

<u>COMBINATION PACKAGINGS</u>				<u>SINGLE PACKAGINGS</u>	
<i>UN number</i>	<i>Inner packaging (see 6.3.2)</i>	<i>Net quantity per inner packaging — cargo</i>	<i>Total quantity per package — cargo</i>	<i>Passenger</i>	<i>Cargo</i>
UN 1724, UN 1728, UN 1747, UN 1753, UN 1762, UN 1763, UN 1766, UN 1767, UN 1769, UN 1771, UN 1781, UN 1784, UN 1799, UN 1800, UN 1801, UN 1804, UN 1816, UN 1818 , UN 2434, UN 2437, UN 2986, UN 2987	Glass	1.0 L	30.0 L	No	30.0 L
	Plastic	Forbidden			
	Steel	5.0 L			

OUTER PACKAGINGS OF COMBINATION PACKAGINGS

Boxes

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

Drums

Fibre (1G)
Plastic (1H2)
Plywood (1D)
Steel (1A2)

SINGLE PACKAGINGS FOR CARGO AIRCRAFT ONLY

Composites

Plastic receptacle in steel drum (6HA1)

Cylinders

See 4.2.7

Drums

Steel (1A1)

Jerricans

Steel (3A1)

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