



International Civil Aviation Organization

DGP/24-WP/20  
30/7/13

**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)**

**TWENTY-FOURTH MEETING**

**Montréal, 28 October to 8 November 2013**

**Agenda Item 3: Development of recommendations for amendments to the *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284SU) for incorporation in the 2015-2016 Edition**

**DRAFT AMENDMENTS TO THE SUPPLEMENT TO THE TECHNICAL INSTRUCTIONS TO ALIGN WITH THE UN RECOMMENDATIONS**

(Presented by the Secretary)

**SUMMARY**

This working paper contains draft amendments to the Supplement to 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 sixth session (Geneva, 14 December 2012).

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

## Part S-3 DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND QUANTITY LIMITATIONS

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UN Model Regulations, Chapter 3.2, Dangerous Goods List, ST/SG/AC.10/40/Add.1

Name	UN No.	Class or division	Subsidiary risk	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
								Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	6	7	8	9	10	11	12	13
<b>Ammonium nitrate with more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance</b>	0222	1.1D			<u>A226</u>			FORBI	DDEN	FORBI	DDEN

UN Model Regulations, Chapter 3.2, Dangerous Goods List, ST/SG/AC.10/40/Add.1  
DGP-WG/13-WP/13 (see paragraph 3.2.17.1 c) of this report)

<u>Adsorbed gas, flammable, n.o.s.</u>	<u>3510</u>	<u>2.1</u>					<u>E0</u>	<u>[219]</u>	<u>[(5 kg)]</u>	<u>[219]</u>	<u>[150 kg]</u>
<u>Adsorbed gas, toxic, n.o.s.*</u>	<u>3512</u>	<u>2.3</u>					<u>E0</u>	<u>[See 210]</u>		<u>[219]</u>	<u>[150 kg]</u>
<u>Adsorbed gas, toxic, flammable, n.o.s.*</u>	<u>3514</u>	<u>2.3</u>	<u>2.1</u>				<u>E0</u>	<u>[See 210]</u>		<u>[See 210]</u>	
<u>Adsorbed gas, toxic, oxidizing, n.o.s.*</u>	<u>3515</u>	<u>2.3</u>	<u>5.1</u>				<u>E0</u>	<u>[See 210]</u>		<u>[See 210]</u>	
<u>Adsorbed gas, toxic, corrosive, n.o.s.*</u>	<u>3516</u>	<u>2.3</u>	<u>8</u>				<u>E0</u>	<u>[See 210]</u>		<u>[See 210]</u>	
<u>Adsorbed gas, toxic, flammable, corrosive, n.o.s.*</u>	<u>3517</u>	<u>2.3</u>	<u>2.1</u> <u>8</u>				<u>E0</u>	<u>[See 210]</u>		<u>[See 210]</u>	
<u>Adsorbed gas, toxic, oxidizing, corrosive, n.o.s.*</u>	<u>3518</u>	<u>2.3</u>	<u>5.1</u> <u>8</u>				<u>E0</u>	<u>[See 210]</u>		<u>[See 210]</u>	

## Chapter 6

### SPECIAL PROVISIONS

Table S-3-4. Special Provisions

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UN Model Regulations, Dangerous goods list, SP370, ST/SG/AC.10/40/Add.1

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A226 (370) This entry applies to:

- ammonium nitrate with more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any added substance; and
- ammonium nitrate with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any added substance, that are not too sensitive for acceptance into Class 1 when tested in accordance with Test Series 2 (see UN Manual of Tests and Criteria, Part I). See also UN No. 1942.

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UN Model Regulations, Dangerous goods list, SP374, ST/SG/AC.10/40/Add.1  
DGP-WG/13-WP/13 (see paragraph 3.2.17.1 e) of this report)

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[ A227 (374) This entry may only be used, as authorized by the competent authority, for packagings, ~~large packagings or intermediate bulk containers (IBC), or parts thereof, which have contained dangerous goods, other than radioactive material, which are transported for disposal, recycling or recovery of their material, other than reconditioning, repair, routine maintenance, remanufacturing or reuse, and which have been emptied to the extent that only residues of dangerous goods adhering to the packaging parts are present when they are handed over for transport.~~]

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## Part S-4

# PACKING INSTRUCTIONS

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### Chapter 3

### CLASS 1 — EXPLOSIVES

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 UN Model Regulations, paragraph 4.1.4.1, P116, PP65, ST/SG/AC.10/40/Add.1
 

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116	PACKING INSTRUCTION 116		116
<i>Inner packagings</i> Bags paper, water and oil resistant plastics textile, plastic-coated or lined woven plastics, sift-proof Receptacles fibreboard, water-resistant metal plastics wood, sift-proof Sheets paper, water-resistant paper, waxed plastics	<i>Intermediate packagings</i> Not necessary	<i>Outer packagings</i> Bags paper, multiwall, water-resistant (5M2) plastics, film (5H4) textile, sift-proof (5L2) textile, water-resistant (5L3) woven plastics (5H1, <del>5H2</del> , <del>5H3</del> ) Boxes aluminium (4B) fibreboard (4G) natural wood, ordinary (4C1) natural wood, with sift-proof walls (4C2) other metal (4N) plywood (4D) reconstituted wood (4F) solid plastics (4H2) steel (4A) Drums aluminium (1B1, 1B2) fibre (1G) other metal (1N1, 1N2) plastics (1H1, 1H2) steel (1A1, 1A2) Jerricans plastics (3H1, 3H2) steel (3A1, 3A2)	
<b>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</b> <ul style="list-style-type: none"> <li>— For UN 0082, 0241, 0331 and 0332, inner packagings are not necessary if leakproof, removable head drums are used as the outer packaging.</li> <li>— For UN 0082, 0241, 0331 and 0332, inner packagings are not required when the explosive is contained in a material impervious to liquid.</li> <li>— For UN 0081, inner packagings are not required when contained in rigid plastic which is impervious to nitric esters.</li> <li>— UN 0331, inner packagings are not required when bags (5H2), (5H3) or (5H4) are used as outer packagings.</li> <li><del>— Bags (5H2 or 5H3) should be used only for UN 0082, 0241, 0331 and 0332.</del></li> <li>— For UN 0081, bags must not be used as outer packagings.</li> </ul>			

UN Model Regulations, P208, ST/SG/AC.10/40/Add.1  
See also paragraphs 3.2.17.1 c) and 3.2.29.1 c) of this report.

210	PACKING INSTRUCTION 210	210
<p>The general packing requirements of Part 4, Chapter 1 of the Technical Instructions must be met.</p> <p>Small quantities of gases in Division 2.3, including mixtures of gases, may be carried in an aircraft under the following conditions:</p> <ol style="list-style-type: none"> <li>The maximum quantity of gas permitted per package must be determined using the following formula:                     <math display="block">\text{Permitted mass} \leq 10^{-3} (\text{RMM}) (\text{LC}_{50})</math> <p>where:</p> <p>RMM = relative molecular mass                      LC<sub>50</sub> expressed in mL/m<sup>3</sup> as defined in Part 2, Chapter 6 of the Technical Instructions                      Permitted mass expressed in grams.</p> <p>For mixtures of toxic gases, where the LC<sub>50</sub> of the mixture or its mass per unit volume at NTP are unknown, the following formula shall be used to determine the permitted mass of the mixture:</p> <math display="block">\frac{\text{mass of component 1}}{10^{-3} (\text{RMM})_1 (\text{LC}_{50})_1} + \frac{\text{mass of component 2}}{10^{-3} (\text{RMM})_2 (\text{LC}_{50})_2} + \frac{\text{mass of component } n}{10^{-3} (\text{RMM})_n (\text{LC}_{50})_n} \leq 1</math> <p>where:</p> <p>NTP is normal temperature and pressure                      (RMM) = relative molecular mass of component 1 ... n</p> <p>This latter formula makes no allowance for any synergistic effect of the mixture and it should not be used where the toxic effects are other than additive.</p> </li> <li>The gas must be contained in a gas cylinder which meets the requirements of Packing Instruction 200, <a href="#">[Packing Instruction 219 for adsorbed gases]</a> or an IP.8 glass ampoule, provided it is compatible with the gas.                     <p>The maximum quantity of gas permitted in a glass ampoule is determined by the above formula but is further limited to not more than 100 g.</p> </li> <li>The glass ampoule or gas cylinder must be tightly packed as to prevent movement in an outer metal pressure vessel containing inert absorbent and cushioning material. The outer metal pressure vessels must be designed to contain the total quantity of gas in case of leakage of the ampoule or cylinder. The outer metal pressure vessel must meet the requirements of Packing Instruction 200. Special care must be taken to prevent corrosion of the inner wall of the outer metal pressure vessels.</li> <li>The outer metal pressure vessel must be tightly packed, so as to prevent movement, in a strong outside packaging.</li> </ol>		

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