



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)**

**TWENTY-FIRST MEETING**

**Montréal, 5 to 16 November 2007**

**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 2009-2010 Edition**

**EXCEPTED QUANTITIES**

(Presented by the Secretary)

**SUMMARY**

This paper discusses the incorporation in the Technical Instructions of a new chapter on excepted quantities and a new column in the list of dangerous goods.

Action by the DGP is in paragraph 2.

**1. INTRODUCTION**

1.1 The incorporation in the UN Model Regulations of a new chapter on excepted quantities in the list of dangerous goods was discussed at DGP-WG07. The requirements in the new chapter largely reflect those in 1;2.4 of the 2007-2008 Edition of the Technical Instructions with the exception of a new excepted quantities mark and a new format in which a code is assigned to each entry in the List of Dangerous Goods with the corresponding quantity limits presented in a table in the new chapter.

1.2 DGP-WG07 agreed that the UN text (excluding paragraph 3.5.1.6) would be adopted except that the additional column in Table 3-1 and the use of E-codes would not be incorporated until the 2011/2012 edition of the Instructions, at which time the new alphanumeric numbering system for the packing instructions would be incorporated.

1.3 The working group on the reformatting of the packing instructions (PIWG) present revised draft packing instructions in DGP/21-WP/4. The new packing instructions retain a numbering system similar to the current one, therefore eliminating the need to amend the format of columns 9 to 12. It is proposed that the additional column in Table 3-1 and the use of E-codes can now be incorporated in the 2009/2010 edition of the Technical Instructions.

**2. ACTION BY THE DGP**

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

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APPENDIX

PROPOSED AMENDMENTS TO THE TECHNICAL INSTRUCTION RELATED TO  
EXCEPTED QUANTITIES IN ORDER TO ALIGN WITH THE UN MODEL REGULATIONS

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*Editorial Note.*— Edits to title of Part 3 proposed in DGP/21-WP/7.

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Part 3

DANGEROUS GOODS LIST, SPECIAL PROVISIONS  
AND  
~~LIMITED QUANTITIES EXCEPTIONS~~

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Chapter 2

ARRANGEMENT OF THE  
DANGEROUS GOODS LIST (TABLE 3-1)

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2.1 ARRANGEMENT OF THE DANGEROUS GOODS LIST  
(TABLE 3-1)

2.1.1 The Dangerous Goods List (Table 3-1) is divided into ~~42~~ 13 columns as follows:

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Column 9 "Excepted Quantities" — this provides an alpha numeric code described in sub-section 5.1.2 which indicates the maximum quantity per inner and outer packaging for transporting dangerous goods as excepted quantities in accordance with Chapter 5.

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*Editorial Note.*— The packing instruction numbers in sample Table 3-1 below reflect those in DGP/21-WP/4.

Name 1	UN No. 2	Class or division 3	Subsidiary risk 4	Labels 5	State variations 6	Special provisions 7	UN packing group 8	Excepted quantities 9	Passenger aircraft		Cargo aircraft	
									Packing instruction 10	Max. net quantity per package 11	Packing instruction 12	Max. net quantity per package 13
<b>Aniline</b>	1547	6.1		Toxic		A113	II	<u>E4</u>	609 <del>654</del> Y609 <del>641</del>	5 L 1 L	611 <del>662</del>	60 L
Aniline chloride, see <b>Aniline hydrochloride</b>												
<b>Aniline hydrochloride</b>	1548	6.1		Toxic			III	<u>E1</u>	619 <del>670</del> Y619 <del>645</del>	100 kg 10 kg	619 <del>677</del>	200 kg
Aniline oil, see <b>Aniline</b>												
Aniline salt, see <b>Aniline hydrochloride</b>												
<b>Anisidines, liquid</b>	2431	6.1		Toxic			III	<u>E1</u>	611 <del>655</del> Y611 <del>642</del>	60 L 2 L	618 <del>663</del>	220 L
<b>Anisidines, solid</b>	2431	6.1		Toxic			III	<u>E1</u>	619 <del>770</del> Y619 <del>645</del>	100 kg 10 kg	619 <del>677</del>	200 kg
<b>Anisole</b>	2222	3		Liquid flammable			III	<u>E1</u>	309 <del>355</del> Y309 <del>344</del>	60 L 10 L	310 <del>366</del>	220 L
<b>Anisoyl chloride</b>	1729	8		Corrosive			II	<u>E2</u>	808 <del>851</del> Y808 <del>840</del>	1 L 0.5 L	812 <del>855</del>	30 L
Anthophyllite, see <b>White asbestos, etc.</b>												
Antimonious chloride, see <b>Antimony trichloride</b>												
<b>Antimony compound, inorganic, liquid, n.o.s.</b>	3141	6.1		Toxic		A12	III	<u>E1</u>	611 <del>655</del> Y611 <del>42</del>	60 L 2 L	618 <del>663</del>	220 L
<b>Antimony compound, inorganic, solid, n.o.s.</b>	1549	6.1		Toxic		A12	III	<u>E1</u>	619 <del>670</del> Y619 <del>645</del>	100 kg 10 kg	619 <del>677</del>	200 kg
Antimony hydride, see <b>Stibine</b>												
<b>Antimony lactate</b>	1550	6.1		Toxic			III	<u>E1</u>	619 <del>670</del> Y619 <del>645</del>	100 kg 10 kg	619 <del>677</del>	200 kg
Antimony (III) lactate, see <b>Antimony lactate</b>												
<b>Antimony pentachloride, liquid</b>	1730	8		Corrosive			II	<u>E2</u>	808 <del>851</del> Y808 <del>840</del>	1 L 0.5 L	812 <del>855</del>	30 L
<b>Antimony pentachloride solution</b>	1731	8		Corrosive		A3	II III	<u>E2</u>	808 <del>851</del> Y808 <del>840</del> 818 <del>852</del> Y818 <del>841</del>	1 L 0.5 L 5 L 1 L	812 <del>855</del> 820 <del>856</del>	30 L 60 L

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**Table 3-2. Special provisions — Multimodal**

<i>TIs</i>	<i>UN</i>	
<u>A163</u>	<u>340</u>	<u>Chemical kits, first aid kits and polyester resin kits containing dangerous substances in inner packagings which do not exceed the quantity limits for excepted quantities applicable to individual substances as specified in column 9 of Table 3-1 may be transported in accordance with 3.5. Division 5.2 substances, although not individually authorized as excepted quantities in the Dangerous Goods List, are authorized in such kits and are assigned Code E2 (see 5.1.2).</u>

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**Table 3-3. Special provisions — transport by air**

A44 ~~The entry C~~ Chemical kits or first aid kits include is intended to apply to boxes, cases, etc., containing small ~~amounts~~ quantities of one or more compatible items of dangerous goods which are used, for example, for medical, analytical or testing or repair purposes.

The only dangerous goods which are permitted in the kits are substances which may be transported as:

- a) excepted quantities as specified in column 9 of Table 3-1, under 1;2.4.2.2 provided the inner packagings and quantities are as prescribed in ~~1;2.4.3 a) and 1;2.4.4 a)~~ 5.1.2 and 5.2.1 a); or
- b) limited quantities under 3;4.1.2.

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DGP-WG/07-WP/4:

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A66 Polyester resin kits consist of two components: a base material (Class 3, Packing Group II or III) and an activator (Division 5.2). The organic peroxide must be type D, E or F, not requiring temperature control. ~~Only organic peroxides that are authorized for transport on passenger aircraft are permitted in the kits. Those requiring temperature control are forbidden.~~ Packing Group II or III is assigned according to the criteria for Class 3, applied to the base material. The quantity limit shown in Column 9 of Table 3-1 applies to the base material.

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*Insert new chapter 5 as follows:*

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## Chapter 5

### DANGEROUS GOODS PACKED IN EXCEPTED QUANTITIES

#### 5.1 Excepted quantities

5.1.1 Excepted quantities of dangerous goods of certain classes, other than articles, meeting the provisions of this chapter are not subject to any other provisions of these Instructions except for:

- a) the training requirements in 1;4;
- b) the classification procedures and packing group criteria in Part 2; and
- c) the packaging requirements of 4;1.1.1, 4;1.1.3.1, 4;1.1.5, 4;1.1.6 and 4;1.1.7.

*Note.— In the case of radioactive material, the requirements for radioactive material in excepted packages in 1;6.1.5 apply.*

5.1.2 Dangerous goods which may be carried as excepted quantities in accordance with this chapter are shown in column 9 of the dangerous goods list by means of an alphanumeric code as follows:

**Table 3-3. Excepted quantity codes for Table 3-1**

<i>Code</i>	<i>Maximum quantity per inner packaging</i>	<i>Maximum quantity per outer packaging</i>
E0	Not permitted as Excepted Quantity	
E1	30g/30 mL	1kg/1 L
E2	30g/30 mL	500g/500 mL
E3	30g/30 mL	300g/300 mL
E4	1g/1 mL	500g/500 mL
E5	1g/1 mL	300g/300 mL

5.1.2.1 For gases, the volume indicated for inner packagings refers to the water capacity of the inner receptacle and the volume indicated for outer packagings refers to the combined water capacity of all inner packagings within a single outer package.

5.1.3 Where dangerous goods in excepted quantities for which different codes are assigned are packaged together the total quantity per outer packaging must be limited to that corresponding to the most restrictive Code.

#### 5.2 Packagings

5.2.1 Packagings used for the transport of dangerous goods in excepted quantities must be in compliance with the following:

- a) there must be an inner packaging and each inner packaging must be constructed of plastic (when used for liquid dangerous goods it must have a thickness of not less than 0.2 mm), or of glass, porcelain, stoneware, earthenware or metal (see also 4;1.1.3.1) and the closure of each inner packaging must be held securely in place with wire, tape

or other positive means; any receptacle having a neck with moulded screw threads must have a leak proof threaded type cap. The closure must be resistant to the contents;

- b) each inner packaging must be securely packed in an intermediate packaging with cushioning material in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents. The intermediate packaging must completely contain the contents in case of breakage or leakage, regardless of package orientation. For liquid dangerous goods, the intermediate packaging must contain sufficient absorbent material to absorb the entire contents of the inner packaging. In such cases, the absorbent material may be the cushioning material. Dangerous goods must not react dangerously with cushioning, absorbent material and packaging material or reduce the integrity or function of the materials;
- c) the intermediate packaging must be securely packed in a strong, rigid outer packaging (wooden, fibreboard or other equally strong material);
- d) each package type must be in compliance with the provisions in 5.3;
- e) each package must be of such a size that there is adequate space to apply all necessary markings; and
- f) overpacks may be used and may also contain packages of dangerous goods or goods not subject to these Instructions.

### 5.3 Tests for packages

5.3.1 The complete package as prepared for transport, with inner packagings filled to not less than 95 per cent of their capacity for solids or 98 per cent for liquids, must be capable of withstanding, as demonstrated by testing which is appropriately documented, without breakage or leakage of any inner packaging and without significant reduction in effectiveness:

- a) drops onto a rigid, non-resilient flat and horizontal surface from a height of 1.8 m:
  - 1) where the sample is in the shape of a box, it must be dropped in each of the following orientations:
    - flat on the base;
    - flat on the top;
    - flat on the longest side;
    - flat on the shortest side;
    - on a corner;
  - 2) where the sample is in the shape of a drum, it must be dropped in each of the following orientations:
    - diagonally on the top chime, with the centre of gravity directly above the point of impact;
    - diagonally on the base chime;
    - flat on the side.

*Note.— Each of the above drops may be performed on different but identical packages.*

- b) a force applied to the top surface for a duration of 24 hours, equivalent to the total weight of identical packages if stacked to a height of 3 m (including the drop sample).

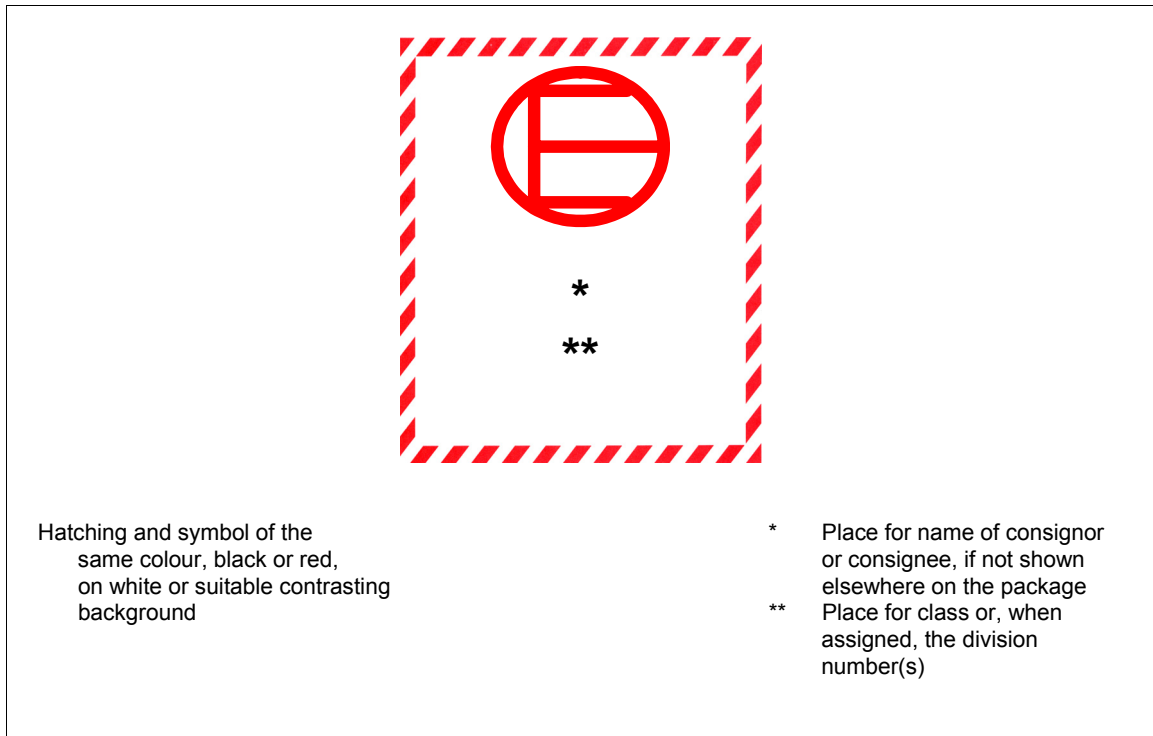
5.3.2 For the purposes of testing, the substances to be transported in the packaging may be replaced by other substances except where this would invalidate the results of the tests. For solids, when another substance is used, it must have the same physical characteristics (mass, grain size, etc.) as the substance to be carried. In the drop tests for liquids, when another substance is used, its relative density (specific gravity) and viscosity must be similar to those of the substance to be transported.

### 5.4 Marking of packages

5.4.1 Packages containing excepted quantities of dangerous goods prepared in accordance with this chapter must be durably and legibly marked with the mark shown in Figure 3-1. The primary hazard class or, when assigned, the division of each of the dangerous goods contained in the package must be shown in the mark. Where the name of the consignor or consignee is not shown elsewhere on the package this information must be included within the mark.

5.4.2 The dimensions of the mark must be a minimum of 100 mm × 100 mm.

5.4.3 An overpack containing dangerous goods in excepted quantities must display the markings required by 5.4.1, unless such markings on packages within the overpack are clearly visible.



**Figure 3-1. Excepted quantities mark**

### 5.5 Documentation

If a document (such as a bill of lading or air waybill) accompanies dangerous goods in excepted quantities, it must include the statement "Dangerous Goods in Excepted Quantities" and indicate the number of packages.

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*Editorial Note 1.*— The adoption of this amendment will result in the consequential deletion of 1;2.4.

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*Editorial Note 2.*— Amend quantity limits for outer packagings for Division 5.2 substances in 1;2.4.3 to read 500 g or 500 ml if new Chapter 5 is not adopted.

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