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**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

Twenty-ninth session  
Geneva, 3-12 (a.m.) July 2006 Item  
5 of the provisional agenda

LIMITED QUANTITIES

Excepted quantities

Transmitted by the expert from the United Kingdom

**Introduction**

1. The expert from the United Kingdom draws the attention of the Sub-Committee to the discussion on dangerous goods in Excepted Quantities that took place during the December 2005 session. Papers were presented by the expert from the United Kingdom, the expert from Belgium and the representative from IATA with detailed discussion both in the plenary and the lunchtime working groups. The United Kingdom undertook to produce a revised paper based on agreements made in principle by the participants in the lunchtime working groups and in the plenary session, see paragraph 62 of ST/SG/AC.10/C.3/56.
2. The expert from the United Kingdom outlines below the main features of this new paper:
  - (a) The Sub-Committee will see in the current paper that Section 3.5.1.1 lists those parts of the regulations that will still apply to the transport of dangerous goods (articles have been deliberately excluded) in Excepted Quantities. All other provisions in the Model regulations not specifically listed in Chapter 3.5 do not apply;

- (b) The expert from the United Kingdom highlights the alphanumeric code in section 3.5.1.2 that has been developed with the assistance of other members of the Sub-Committee. This would be inserted in column 7 of the dangerous goods list and would indicate the inner and outer packaging maximum quantities permitted. Examples of how this would appear are given in the section of the paper headed 'Consequential Amendments';
  - (c) The packaging requirements, including the materials to be used and the types of closures, are covered by section 3.5.1.3; section 3.5.1.4 details the testing requirements for packagings. These simply reflect the existing provisions in the ICAO Technical Instructions;
  - (d) It was agreed during the lunchtime working group that the package marking and the placarding for the transport unit when the number of packages reached above a certain amount should be similar to the marking currently used by IATA. It was thought that triggering such requirements on the basis of actual quantities of dangerous goods within EQ packages would be too difficult to calculate and enforce. A simpler system based on the number of packages transported, given the small amounts of dangerous goods they would contain, would be a more practicable approach. The proposals here are detailed in 3.5.1.5 and 3.5.1.6;
  - (e) It was felt that there was no need for transport documentation as this would obviate much of the benefit of the proposal and is not required in air transport. However, for the maritime mode when the transport unit carries 1000 packages or more of dangerous goods in exempted quantities a container packing certificate is to be provided, see section 3.5.1.7;
  - (f) Finally the expert from the United Kingdom has prepared for the Guiding Principles a table, 3.5.1.1.1, which details for each class or division the amount of exempted quantities that are permitted in order that the rationale can be readily followed. Other experts may prefer to see this text in the body of the Model Regulations as an informative Note in 3.5.1.2.
3. The list of substances which are currently permitted for transport in excepted quantities in air transport for which it is now proposed that Excepted Quantities codes be assigned in the Model Regulations is reproduced in informal document UN/SCETDG/29/INF.3 (kindly prepared by the United States Department of Transportation)
4. The expert from the United Kingdom commends the proposals outlined below as a step towards modal harmonisation of small quantities of dangerous goods and asks that the Sub-Committee agree to their inclusion in the next revision of the Model Regulations.

## Proposal

5. Add the following text to the Model Regulations:

### “Chapter 3.5

#### **DANGEROUS GOODS PACKED IN EXCEPTED QUANTITIES**

##### **3.5.1** *Excepted quantities*

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

- (a) the training requirements in Chapter 1.3;
- (b) the classification procedures and packing group criteria in Part 2, Classification;
- (c) the packaging requirements of 4.1.1.1, 4.1.1.2, 4.1.1.4, 4.1.1.4.1 and 4.1.1.6 in Part 4;

~~(d)~~ **Note:** in the case of radioactive material, the requirements for radioactive material in excepted packages in 2.7.7.1.2.1 and 2.7.9.1 apply.

3.5.1.2 Dangerous goods that may be carried as excepted quantities in accordance with these provisions are shown in column 7 of the dangerous goods list by means of an alphanumeric code as follows:

Code	Inner <u>Packaging</u>	Outer <u>Packaging</u>
<del>E0</del> None	Not permitted as Excepted Quantity	
E1	30g/30ml	1kg/1L
E2	30g/30ml	500g/500ml
E3	30g/30ml	300g/300ml
E4	1g/1ml	500g/500ml
E5	1g/1ml	300g/300ml

Excepted quantities of dangerous goods shall be transported in accordance with the provisions of sections 3.5.1.3 to 3.5.1.6.

3.5.1.3 Packagings, ~~including their closures,~~ used for the transport of dangerous goods in excepted quantities shall be in compliance with the following:

- (a) there shall be an inner packaging and each inner packaging shall be constructed of plastics material (when used for liquid dangerous goods it shall have a minimum thickness of not less than 0.2 mm), or of glass, porcelain, stoneware, earthenware~~earthenware~~ or metal (see also 4.1.1.2) and the removeable closure of each inner packaging ~~with a removable closure~~ 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 shall be resistant to the contents;
- (b) each inner packaging shall 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 shall completely contain the contents in case of breakage or leakage, regardless of package orientation. For liquid dangerous goods, the intermediate packaging shall 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 shall not react dangerously with cushioning and absorbent material or reduce the integrity or function of the materials;
- (c) the intermediate packaging shall be securely packed in a strong, rigid outer packaging (wooden, fibreboard or other equally strong material);
- (d) each package type shall be in compliance with the provisions in 3.5.1.4;
- (e) each package must be of 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 Regulations. provided there are no packages containing dangerous goods or other goods that may react dangerously with each other (see also 4.1.1.6).~~

### 3.5.1.4 *Package tests*

3.5.1.4.1 The complete package as prepared for transport, with inner packagings filled to not less than 95% of their capacity for solids or 98% 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:

(i) Where the samples are in the shape of a box; they shall be dropped in each of the following attitudes:

(a) flat on the bottom;

(b) flat on the top;

(c) flat on the long side;

~~(d) flat on the short side;~~

~~(e) on a corner.~~

~~(a) the following free drops onto a rigid, non-resilient flat and horizontal surface from a height of 1.8 m:~~

~~(i) for a packaging with six sides (i.e. a box shape):~~

~~— one drop flat on the bottom;~~

~~— one drop flat on the top;~~

~~— one drop flat on the long side;~~

~~— one drop flat on the short side; and~~

~~— one drop on a corner at the junction of three intersecting edges;~~

(ii) Where the sample is in the shape of a drum, it shall be dropped in each of the following attitudes:

(a) diagonally on the top chime, with the centre of gravity directly above the point of impact;

(b) diagonally on the base chime;

(c) flat on the side.

~~(ii) for a cylindrical packaging (i.e. a drum shape):~~

~~— one drop diagonally on the chime or on a circumferential seam or an edge; and~~

~~— one drop on the weakest part not tested by the first drop, e.g. a closure.~~

*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).

3.5.1.4.2 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 should be similar to those of the substance to be transported.

### **3.5.1.5 Marking of packages**

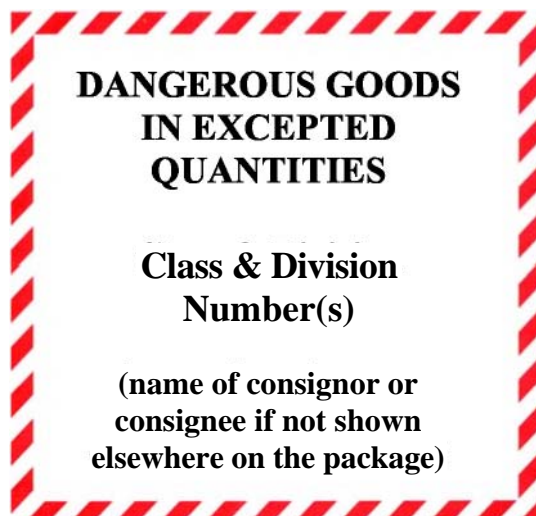
3.5.1.5.1 Packages containing excepted quantities of dangerous goods prepared in accordance with this Chapter shall be durably and legibly marked with the mark shown in Figure 3.5.1. The Class or Class and Division numbers of each of the dangerous goods contained in the package shall be shown in the mark. Where the name of the consignor or consignee is not shown elsewhere on the package this information shall be included within the mark.

3.5.1.5.2 For packages the dimensions of the mark shall be a minimum of 100 mm × 100 mm, except in the case of packages of such dimensions that they can only bear smaller marks.

3.5.1.5.3 An overpack containing dangerous goods in excepted quantities shall display the markings required by 3.5.1.5.1, unless such markings on packages within the overpack are clearly visible. ~~If the package is included in an overpack, these markings shall be clearly visible or appear on the overpack.~~

~~3.5.1.5.4 The mark in Figure 3.5.1 is a statement that the requirements of this part have been complied with.~~

Figure 3.5.1



Excepted quantities mark

Black or red hatching on white or suitable contrasting background

### **3.5.1.6 Maximum number of packages in any one transport unit**

The number of packages in any one transport unit shall not exceed 1.000.

### ~~3.5.1.6 — *Marking of transport units*~~

~~3.5.1.6.1 Transport units carrying 1000 packages or more of dangerous goods in excepted quantities shall be marked with the mark shown in Figure 3.5.1 on at least two opposing sides of the transport unit and in such a position that they are visible to all those involved in the loading or unloading process.~~

~~3.5.1.6.2 — The minimum dimensions of the mark shall be 250 mm × 250 mm.~~

### 3.5.1.7 Documentation

When a document is used it shall include the statement “ Dangerous Goods in Excepted Quantites “ and indicate the number of packages.

### ~~3.5.1.7 — *Documentation*~~

~~3.5.1.7.1 Where a transport unit contains 1000 packages or more of dangerous goods in excepted quantities and will be transported by sea, a container/vehicle packing certificate shall be prepared in accordance with paragraphs 5.4.2.1(a) to (h) inclusive and shall include the statement "Dangerous goods in excepted quantities".~~

## **Consequential amendments**

6. The expert from the United Kingdom proposes that excepted quantity provisions should be shown in the Dangerous Goods List by splitting the existing column (7) ("Limited quantities") horizontally, re-titling the column and adding the EQ Code in the lower half of each entry. An example from the dangerous goods list showing this is below:

UN No.	Name and description	Class or division	Subsidiary risk	UN packing group	Special provisions	Limited quantities	Packagings and IBCs		Portable tanks and bulk containers	
						Excepted quantities	Packing instruction	Special packing provisions	Instructions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
0004	AMMONIUM PICRATE dry or wetted with less than 10% water, by mass †	1.1D				NONE	P112 (a), (b) or (c)	PP26		
						<del>NONE</del> E0				
2763	TRIAZINE PESTICIDE, SOLID, TOXIC	6.1		I	61 274	NONE	P002 IBC07	B1	T6	TP33
						E5				
		6.1		II	61 274	500 g	P002 IBC08	B2, B4	T3	TP33
						E4				
		6.1		III	61 223 274	5 kg	P002 IBC08	B3	T1	TP33
						E1				

7. Additionally the explanatory text for Column 7 in 3.2.1 will need to be amended as follows:

“Column 7 "Limited Quantities and Excepted Quantities" - above the horizontal line, this column gives the maximum quantity per inner packaging or article for transporting dangerous goods as limited quantities in accordance with Chapter 3.4. The word "None" above the horizontal line in this column means that the article or substance is not permitted to be transported as limited quantities. Below the horizontal line, this column gives an alphanumeric code described in section 3.5.1.2 and indicates the maximum quantity per inner and outer packaging for transporting dangerous goods as excepted quantities in accordance with Chapter 3.5. ~~The code "E0" below the horizontal means that the substance is not permitted to be transported as excepted quantities.~~”

### Guiding Principles

8. The expert from the United Kingdom also proposes that the table below should be inserted into the guiding principles document for future reference, in order that the rationale for assigning excepted quantity codes in future may be readily understood.

“Substances permitted in excepted quantities are based on those that may be transported by passenger aircraft by the 2005-2006 edition of the ICAO Technical Instructions. These are:



**Table X.1.1: Excepted quantities**

	<b>Packing Group I</b>	<b>Packing Group II</b>	<b>Packing Group III</b>
<b>CLASS/ DIVISION</b>	<b>E-Code</b>	<b>E-Code</b>	<b>E-Code</b>
1		<del>E0 (not permitted)</del> None	
2.1		<del>E0 (not permitted)</del> None	
2.2 <sup>a</sup> without subsidiary risk		E1	
2.3		<del>E0 (not permitted)</del> None	
3 without subsidiary risk <sup>b</sup>	E3	E2	E1
3 with subsidiary risk	<del>None</del> E0 (not	E2	E1
4.1 <sup>c</sup>	<del>None</del> E0 (not	E2	E1
4.2	<del>None</del> E0 (not	E2	E1
4.3	<del>None</del> E0 (not	E2	E1
5.1	<del>None</del> E0 (not	E2	E1
5.2 <sup>d</sup>	E2	E2	E2
6.1	E5	E4	E 1
6.2		<del>None</del> E0 (not permitted)	
7		<del>None</del> E0 (not permitted)	
8 <sup>e</sup>	<del>None</del> E0 (not	E2	E1
9	Not applicable	E2	E1

<sup>a</sup> 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;

<sup>b</sup> Desensitized explosives shall not be transported as excepted quantities;

<sup>c</sup> Self-reactive substances and desensitized explosives shall not be transported as excepted quantities;

<sup>d</sup> Division 5.2 dangerous goods shall ONLY be transported as excepted quantities if in UN No. 3316, Chemical Kit or First Aid Kit;

<sup>e</sup> UN Nos. 2803 and 2809 shall not be transported as excepted quantities.”