



**WORKING PAPER**

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

**Abu Dhabi, United Arab Emirates, 7 to 11 November 2010**

- 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 2013/2014 Edition**
- 2.3: Part 3 — Dangerous Goods List, Special Provisions and Limited and Excepted Quantities**

**CONSIDERATIONS FOR LIMITED QUANTITIES CONTAINED IN ONE  
OUTER PACKAGING**

(Presented by D. Brennan)

**SUMMARY**

This paper proposes a revision to the provisions for dangerous goods packed in limited quantities when contained in one outer packaging to address an inconsistency with respect to certain items in Class 2 and Class 9.

Action by the DGP-WG is in paragraph 2.

**1. INTRODUCTION**

1.1 According to Part 3;4.3.3 a) and b), dangerous goods in Class 2 and Class 9 are not required to be taken into account for the “Q” value calculation when packed in the same outer packaging as dangerous goods of other classes provided that the gross mass of the completed package does not exceed 30 kg.

1.2 The basis for this exception appears to be the expectation that all substances and articles in Class 2 and Class 9 that are permitted in limited quantities are only limited by the maximum gross mass of 30 kg per package.

1.3 However, at DGP/22 the panel agreed to allow fuel cell cartridges containing hydrogen in a metal hydride, UN 3479 and fuel cell cartridges containing liquefied flammable gas, UN 3478 to be packed in limited quantities with a maximum net quantity of 0.5 kg. In addition, gas cartridges / receptacles, small, containing gas, UN 2037 in Division 2.1 and 2.2 and chemical kit / first aid kit,

UN 3316 in Class 9 are also permitted in limited quantities up to a maximum net quantity of 1 kg per package.

1.4 As these articles have clear net mass limits they must then be taken into account of in the “Q” value calculation if they are packed together in the same outer packaging with dangerous goods of other classes.

## 2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to revise Part 3;4.3.3 as shown:

### Chapter 4

#### DANGEROUS GOODS IN LIMITED QUANTITIES

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##### 4.3 QUANTITY LIMITATIONS

4.3.1 The net quantity per package must not exceed the quantity specified in column 11 of Table 3-1 against the packing instruction number identified by the prefix letter “Y” in column 10.

4.3.2 The gross mass per package must not exceed 30 kg.

4.3.3 When different dangerous goods are contained in one outer packaging, the quantities of such dangerous goods must be so limited that:

- a) for classes other than Classes 2 (except UN 2037, UN 3478 and UN 3479) and 9 (except UN 3316), the total net quantity in the package does not exceed the value of 1, where “Q” is calculated using the formula:

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where  $n_1$ ,  $n_2$ , etc., are the net quantities of the different dangerous goods and  $M_1$ ,  $M_2$  etc., are the maximum net quantities for these different dangerous goods shown in Table 3-1 against the relevant “Y” packing instructions; and

- b) for Classes 2 (except UN 2037, UN 3478 and UN 3479) and 9 (except UN 3316):
  - 1) when packed together without goods of other classes, the gross mass of the package does not exceed 30 kg; or
  - 2) when packed together with goods of other classes, the gross mass of the package does not exceed 30 kg and the total net quantity in the package of goods other than in Classes 2 (except UN 2037, UN 3478 and UN 3479) or 9 (except UN 3316) does not exceed the value of 1 when calculated according to a) above.
- c) carbon dioxide, solid (dry ice), UN 1845 may be packed together with goods of other classes, provided that the gross mass of the package does not exceed 30 kg. The quantity of dry ice does not need to be taken into account in the calculation of the “Q” value. However, the packaging containing the carbon dioxide, solid (dry ice) and the outer packaging must permit the release of carbon dioxide gas.

4.3.4 Where the different dangerous goods in the outer packaging consist only of those with the same UN number, packing group and physical state (i.e. solid or liquid), the calculation in 4.3.3 a) does not need to be made. However, the total net quantity in the package must not exceed the maximum net quantity according to Table 3-1.

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