



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)**

**TWENTY-THIRD MEETING**

**Montréal, 11 to 21 October 2011**

**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**

**CLARIFICATION REGARDING ASSIGNMENT TO PACKING GROUP III FOR CERTAIN FLAMMABLE LIQUIDS**

(Presented by D. Brennan)

**SUMMARY**

This working paper proposes deletion of paragraph 3.2.2 in Part 2 of the Technical Instructions to remove any possible confusion regarding the assignment of Packing Group III to certain viscous flammable liquids.

**Action by the DGP:** The DGP is invited to:

- delete Part 2;3.2.2 of the Technical Instructions and revise existing 2;3.2.3 as shown in the appendix to this working paper;
- revise subparagraph 2;3.2.3 d) to clearly specify the net quantity limit per package applicable to viscous flammable liquids for inclusion in Packing Group III. A suggested limit is shown with the proposed amendment in the appendix to this working paper.

**1. INTRODUCTION**

1.1 Paragraphs 3.2.2 and 3.2.3 in Part 2 of the Technical Instructions provide indication of the criteria that must be applied to allow viscous flammable liquids with a flash point that would normally require the substance to be assigned to Packing Group II to instead be assigned to Packing Group III.

1.2 The equivalent paragraphs in the UN Model Regulations have been the subject of review with changes being agreed at the last, 39<sup>th</sup>, meeting of the UN Subcommittee. The changes agreed by the UN Subcommittee will be adopted into the 18<sup>th</sup> Revised Edition of the Model Regulations that will be considered by the DGP in the next biennium, 2012-2013.

1.3 The changes for the next biennium from the UN Model Regulations are not likely to significantly change the existing provisions in Part 2;3; however, in reviewing the UN provisions against those in Part 2;3 it is believed that there exists scope for confusion and misapplication of the provisions of the Technical Instructions based on the references to the UN Manual of Tests and Criteria in paragraph 3.2.2.

1.4 Paragraph 3.2.2 in Part 2 states that viscous “substances” with a flash point below 23°C may be placed in Packing Group III in conformity with the procedures specified in Part III, subsection 32.3 of the UN *Manual of Tests and Criteria* on the basis of the conditions listed. The last condition being the “size of the receptacle”. Paragraph 32.3.1.7 (d) in the UN manual identifies that the “capacity of the receptacle used does not exceed 450 litres.”

1.5 Paragraph 3.2.3 in Part 2 also addresses assignment of Packing Group III to certain viscous “flammable liquids” with four specific conditions listed, but no reference to the UN Manual of Tests and Criteria. Subparagraph d) states that “the capacity of the receptacle used does not exceed 30 L.”

1.6 It is believed that paragraph 3.2.2 is redundant text and that paragraph 3.2.3 should be revised to include reference to the procedures contained in the UN *Manual of Tests and Criteria*, but retaining the conditions that must be met for the flammable liquid to be assigned to Packing Group III.

1.7 The other issue relates around the requirements of 3.2.3 d), which states that the capacity of receptacle used does not exceed 30 L. Here it is believed that intent is to limit the size of the “receptacle” used in air transport below the limit applied in the UN Model Regulations (450 L). The value of 30 L though is difficult to reconcile when applied to a “receptacle”, given that a single packaging is a receptacle.

1.8 For passenger aircraft the per package limit for a Packing Group II flammable liquid without a subsidiary risk is 5 L with a maximum per inner packaging of 5 L for plastic or metal inner packagings. For Packing Group III the per package limit is 60 L, which may a single packaging, although the maximum for inner packagings is 10 L for plastic and metal. The limits applicable for the same substances on cargo aircraft are 60 L per package for Packing Group II, 5 L for plastic inner packagings and 10 L for metal, single packagings are permitted. Packing Group III, 220 L per package, 10 L plastic, 25 L metal, single packagings permitted.

1.9 Based on the above it can be seen that for transport on passenger aircraft the value of 30 L, if applied to a single packaging, appears to offer the shipper some benefit. However, for cargo aircraft if applied to a single packaging the shipper is being penalised. It is not believed that there can be any application to inner packagings as the value of 30 L exceeds that permitted even for Packing Group III substances on cargo aircraft.

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## APPENDIX

### AMENDMENTS TO THE TECHNICAL INSTRUCTIONS

#### Part 2

### CLASSIFICATION OF DANGEROUS GOODS

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#### Chapter 3

### CLASS 3 — FLAMMABLE LIQUIDS

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#### 3.2 ASSIGNMENT OF PACKING GROUPS

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~~3.2.2 Viscous substances such as paints, enamels, lacquers, varnishes, adhesives and polishes having a flash point below 23°C may be placed in Packing Group III in conformity with the procedures prescribed in Part III, subsection 32.3, UN Manual of Tests and Criteria, on the basis of:~~

- ~~a) the viscosity expressed as the flow time in seconds;~~
- ~~b) the closed-cup flash point;~~
- ~~c) a solvent separation test; and~~
- ~~d) the size of the receptacle.~~

##### 3.2.3 *Criteria for inclusion in Packing Group III*

Viscous flammable liquids such as paints, enamels, varnishes, adhesives and polishes with a flash point of less than 23°C ~~are included in Packing Group III~~ may be assigned to Packing Group III in conformity with the procedures prescribed in Part III, subsection 32.3 of the UN Manual of Tests and Criteria provided that:

- a) less than 3 per cent of the clear solvent layer separates in the solvent separation test;
- b) the mixture or any separated solvent does not meet the criteria for Division 6.1 or Class 8;
- c) the viscosity and flash point are in accordance with Table 2-5;
- I** d) the capacity of the receptacle used does not exceed 30 L when assigned to Packing Group III, the flammable liquids must not exceed a net quantity per package of 30 L for passenger aircraft or 100 L for cargo aircraft.

3.2.4 Substances classified as flammable liquids due to their being transported or offered for transport at elevated temperatures are included in Packing Group III.

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