



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)**

**TWENTY-SECOND MEETING**

**Montréal, 5 to 16 October 2009**

**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 2011-2012 Edition**

**MIXTURES OR SOLUTIONS AND COMPATIBILITY**

(Presented by G. A. Leach)

**SUMMARY**

This working paper seeks to emphasise the need for consideration of compatibility even though a substance may be in trace quantities.

**Action by the DGP:** The DGP is invited to consider the addition of notes to the Introductory Chapter of Part 2 and Part 3;1 of the Technical Instructions as presented in the appendix.

**1. INTRODUCTION**

1.1 Following the explosion of a gas cylinder containing a mixture of ethyl chloride, the Introductory Chapter to Part 2 and Part 3;1.3 of the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) were amended by addendum to clarify the classification of mixtures and the effect the presence of traces may have. However, whilst the text provided conditions under which traces could be discounted for classification purposes, no mention was made of the need to still consider any compatibility issues there may be with the trace substance.

1.2 After the ethyl chloride incident, it transpired that mixtures containing more than 1% of that substance should not be contained in aluminium alloy cylinders because of compatibility concerns. In some circumstances, following the amended text may lead the reader to discount ethyl chloride in percentages greater than 1% but less than a level at which it needs to be taken account of for classification purposes, which may mean that the warnings in Packing Instruction 200 concerning the specific compatibility issues are missed, because the classification determined may not have special packing provision “a” against it.

1.3 Whilst it is true that the shipper has an over arching responsibility to ensure compatibility of dangerous goods with the packaging selected, it is suggested that the chances of a shipper overlooking

this responsibility would be reduced, and thus safety increased, if an appropriate note were to be added at the appropriate locations in the Technical Instructions. Whilst this would not require a shipper to do anything further than their current responsibilities, it is suggested that if the new text is agreed it should be brought to the attention of the UN as this may benefit users of the surface modes.

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**APPENDIX**

**PROPOSED AMENDMENTS TO THE TECHNICAL INSTRUCTIONS**

**Part 2**

**CLASSIFICATION OF DANGEROUS GOODS**

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**INTRODUCTORY CHAPTER**

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**3. UN NUMBERS AND PROPER SHIPPING NAMES**

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3.5 A mixture or solution composed of a single predominant substance identified by name in Table 3-1 and one or more substances not subject to these Instructions and/or traces of one or more substances identified by name in Table 3-1 must be assigned the UN number and proper shipping name of the predominant substance named in Table 3-1, unless:

- a) the mixture or solution is identified by name in Table 3-1; or
- b) the name and description of the substance named in Table 3-1 specifically indicates that it applies only to the pure substance; or
- c) the hazard class or division, subsidiary risk(s), physical state or packing group of the solution or mixture is different from that of the substance named in Table 3-1; or
- d) the hazard characteristics and properties of the mixture or solution necessitate emergency response measures that are different from those required for the substance identified by name in Table 3-1.

Note.— The compatibility requirements of 4;1.1.3 still apply to traces of substances which may not need to be taken account of for classification purposes.

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## Part 3

# DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND LIMITED AND EXCEPTED QUANTITIES

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## Chapter 1

### GENERAL

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#### 1.3 MIXTURES OR SOLUTIONS

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1.3.2 A mixture or solution composed of a single predominant substance identified by name in Table 3-1 and one or more substances not subject to these Instructions and/or traces of one or more substances identified by name in Table 3-1 must be assigned the UN number and proper shipping name of the predominant substance named in Table 3-1, unless:

- a) the mixture or solution is specifically identified by name in Table 3-1; or
- b) the name and description of the substance named in Table 3-1 specifically indicates that it applies only to the pure substance; or
- c) the hazard class or division, subsidiary risk(s), physical state or packing group of the solution or mixture is different from that of the substance named in Table 3-1; or
- d) the hazard characteristics and properties of the mixture or solution necessitate emergency response measures that are different from those required for the substance identified by name in Table 3-1.

Note.— The compatibility requirements of 4:1.1.3 still apply to traces of substances which may not need to be taken account of for classification purposes.

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