



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
WORKING GROUP MEETING (DGP-WG/22)**

Montréal, 21 to 25 November 2022

- Agenda Item 2: Managing air-specific safety risks and identifying anomalies (REC-A-DGS-2025)**
2.2: Develop proposals, if necessary, for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2025-2026 Edition

PRESSURE DIFFERENTIAL REQUIREMENTS IN PART 4;1 1 6 AND PART 6;4.3.5

(Presented by D. Brennan)

SUMMARY

This working paper proposes that the 75 kPa pressure differential relaxation that is provided for in Part 4;1.1.6 and Part 6;4.5.3 for liquid dangerous goods in Packing Group III of Class 3 and Division 6.1 be extended to include liquids in Class 9.

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 Part 4;1.1.6 in the Technical Instructions specifies that “inner packagings for liquids must be capable of withstanding without leakage an internal pressure which produces a pressure differential of not less than 95 kPa (not less than 75 kPa for liquids in Packing Group III of Class 3 or Division 6.1), ...”. The same conditions are set out in Part 6;4.5.3 a), except that in Part 6;4.5.3 this is an internal pressure (hydraulic) test that must be performed on metal, plastic and composite UN specification packagings intended to contain liquids.

1.2 The relaxation for liquids in Packing Group III of Class 3 and Division 6.1 for inner packagings and single and composite packagings has been in place since at least the 2001-2002 Edition of the Technical Instructions and recognizes that liquid dangerous goods in Packing Group III of Class 3 and Division 6.1 pose a lesser hazard than liquid dangerous goods in other classes or divisions or Packing Groups I and II for Class 3 and Division 6.1.

1.3 However, it begs the question as to why the relaxation is not provided to allow a 75 kPa pressure differential for packagings for liquid dangerous goods in Packing Group III of Class 9 given that Class 9 dangerous goods pose a limited hazard in transport and certainly no greater hazard than those in Class 3 or Division 6.1.

2. **ACTION BY THE DGP-WG**

2.1 The DGP-WG is invited to revise the provisions of Part 4;1.1.6 and Part 6;4.5.3 as shown in the appendix to this working paper.

APPENDIX

PROPOSED AMENDMENT TO PART 4 OF THE TECHNICAL INSTRUCTIONS

Part 4

PACKING INSTRUCTIONS

Chapter 1

GENERAL PACKING REQUIREMENTS

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1.1.3 Compatibility requirements

...

1.1.6 Packagings for which retention of liquid is a basic function must be capable of withstanding without leakage an internal pressure which produces a pressure differential of not less than 95 kPa (not less than 75 kPa for liquids in Packing Group III of Class 3, ~~or~~ Division 6.1 or Class 9), or a pressure related to the vapour pressure of the liquid to be conveyed, whichever is the greater. The pressure related to the vapour pressure must be determined as either:

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Part 6

PACKAGING NOMENCLATURE, MARKING, REQUIREMENTS AND TESTS

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Chapter 4

PACKAGING PERFORMANCE TESTS

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4.5 INTERNAL PRESSURE (HYDRAULIC) TEST

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4.5.3 Test method and pressure to be applied: metal packagings including their closures must be subjected to the test pressure for 5 minutes. Plastic packagings and composite packagings (plastic material) including their closures must be subjected to the test pressure for 30 minutes. This pressure is the one to be included in the mark required by 2.1.1 d). The manner in which the packagings are supported must not invalidate the test. The test pressure must be applied continuously and evenly: it must be kept constant throughout the test period. The hydraulic pressure (gauge) applied, as determined by any one of the following methods, must be:

- a) not less than the total gauge pressure measured in the packaging (i.e. the vapour pressure of the filling liquid and the partial pressure of the air or other inert gases minus 100 kPa) at 55°C, multiplied by a safety factor of 1.5. This total gauge pressure must be determined on the basis of a maximum degree of filling in accordance with Part 4; 1.1.5 and a filling temperature of 15°C. The test pressure must be not less than 95 kPa (not less than 75 kPa for liquids in Packing Group III of Class 3, ~~or~~ Division 6.1 or Class 9); or

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