



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

SPECIAL PROVISION A75

(Presented by the Dangerous Goods Advisory Council)

SUMMARY

This paper proposes to amend Special Provision A75 pertaining to sterilization devices containing excepted quantities of hydrogen peroxide.

Action by the DGP: The DGP is invited to amend Special Provision A75 as presented in the appendix to this working paper.

1. INTRODUCTION

1.1 At the DGP Working Group of the Whole Meeting in Atlantic City (DGP-WG/11, 4 to 8 April 2011), DGAC noted the difficulties encountered in meeting the Special Provision A75 requirement for comparative fire testing showing no difference in burning rate (DGP/23-WP/3, paragraph 3.2.16 refers). In particular, it was noted that the presence of even small quantities of hydrogen peroxide will produce some difference in effect and with the increasing accuracy of equipment used to measure test conditions, the comparative fire test requirement essentially precludes air transport of these small devices critical to health services. As noted previously, the competent authority for the United States has issued an approval for these devices. The approval is attached for the information of the panel.

1.2 The results of the discussion at DGP-WG/11 are reflected in DGP/23-WP/3, paragraph 3.2.16. With respect to the DGAC proposal to remove the requirement for a comparative fire test, the working group concluded:

“3.2.16.3 Although there was support for the proposal, there was concern with the entire requirement being removed. It was suggested that the requirement could be alleviated by allowing small differences in burning rates instead of none.”

1.3 In carrying out the comparative testing for the above referenced approval, the tested packagings contained four inner packagings containing 29.6 ml each of 59% hydrogen peroxide. As such, the tested package closely matched the limits allowed by Special Provision A75 limits. While many measurements taken in conducting comparative fire tests may vary depending on test conditions, comparing the maximum temperature inside packages while burning should provide a reliable basis for evaluating the potential increased fire severity. In the case of the comparative fire testing conducted, the maximum temperature measured inside the package containing the hydrogen peroxide was 900°C whereas the maximum temperature inside the same package using water was 710°C. DGAC considers that the fire tests done in relation to the United States approval validate the level of safety provided by the excepted quantity package provisions and quantity limits in A75 and that the results suggest that the Special Provision A75 comparative fire test requirement is unnecessary. Nevertheless, in view of the working group's comments, DGAC proposes revision of Special Provision A75 fire test criteria to permit an increased temperature due to the presence of hydrogen peroxide of 250°C.

1.4 With respect to the above United States approval, DGAC notes that it permits small openings in packagings to allow for the slow escape of gas over the life of the packaging. Based on data available, for the 29.6 ml of hydrogen peroxide per inner packaging described in the approval, at a temperature of 40°C, the amount of oxygen gas released due to decomposition would be approximately 0.02 mL per minute — an imperceptible amount quickly dispersed by an aircraft ventilation system. DGAC proposes that provision also be made for such safe release in the special provision.

APPENDIX

AMENDMENTS TO THE TECHNICAL INSTRUCTIONS

Part 3

DANGEROUS GOODS LIST,
SPECIAL PROVISIONS AND
LIMITED AND EXCEPTED QUANTITIES

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Chapter 3

SPECIAL PROVISIONS

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A75 Articles such as sterilization devices, when containing less than 30 mL per inner packaging with not more than 150 mL per outer packaging, may be transported on passenger and cargo aircraft in accordance with the provisions in 3.5, irrespective of the value in column 9 and the indication of "forbidden" in columns 10 to 13 of the Dangerous Goods List (Table 3-1), provided such packagings were first subjected to comparative fire testing. Comparative fire testing ~~must show no difference in burning rate~~ between a package as prepared for transport (including the substance to be transported) and an identical package filled with water must show that the maximum temperature measured inside the packages during testing does not differ by more than 250°C. Packagings may include a vent to permit the slow escape of gas produced from gradual decomposition

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