



## **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**

### **POLYESTER RESIN KITS**

(Presented by G. A. Leach)

#### **SUMMARY**

This working paper proposes to amend Packing Instructions 370 and Y370 to provide for Packing Group III base material in polyester resin kits.

**Action by the DGP:** The DGP is invited to amend Packing Instructions 370 and Y370 as presented in the appendix to this working paper. If the amendment is agreed, it is suggested the United Nations Subcommittee of Experts on the Transport of Dangerous Goods (UNSCOE) be advised, since there is no provision in the Model Regulations for Packing Group III base materials to be treated differently to those of Packing Group II.

## **1. INTRODUCTION**

1.1 At the DGP Working Group of the Whole Meeting in Atlantic City (DGP-WG/11, 4 to 8 April 2011), an issue related to polyester resin kits was discussed. For completeness, most of that working paper is reproduced below but with some amendments to clarify the issue. The proposal originally presented to the working group (DGP/23-WP/3, paragraph 3.2.30 refers) has also been amended.

1.2 Packing Instruction 370 relating to polyester resin kits specifies quantity limitations for inner packagings containing Class 3 base material. However, the quantity limitations apply irrespective of whether the substance is Packing Group II or III and are aligned with those for Packing Group II. A problem has recently been experienced by a United Kingdom shipper who wished to ship a polyester resin kit where the Packing Group III base material had a specific gravity considerably in excess of 1, which resulted in the resin kit exceeding the 5 kg overall pack limit. Environmental directives now require manufacturers of base materials to reduce the percentage of solvent (due to the release of volatile organic

compounds) and this is typically achieved by additives to make sure the application properties do not deteriorate. However, as solvents typically have a specific gravity of less than 1, the effect of this reduction is to increase the overall specific gravity of the product.

1.3 It is suggested there is no safety justification for limiting Packing Group III substances to the quantities applicable to Packing Group II and Packing Instructions 370 and Y370 should be amended to reflect this to provide for polyester resin kits of this type. In preparing this working paper it was also noted that the tables could be misread, confusing the physical state of the activator and the base material. The latter is always a liquid into which the activator is stirred. As well as the amendments to quantities for Packing Group III, Packing Instructions 370 and Y370 have been further amended in the appendix as an example of an alternative layout with a separate column for the base which should lead to better clarity.

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APPENDIX A

PROPOSED AMENDMENT TO THE TECHNICAL INSTRUCTIONS

Packing Instruction 370

Passenger and cargo aircraft for UN 3269 (Packing Group II or III) only

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COMBINATION PACKAGINGS						SINGLE PACKAGINGS
Packing conditions	Inner packaging (see 6;3.2)	<u>Inner packaging quantity (per receptacle) — for base liquid material</u>	<u>Inner packaging quantity (per receptacle) — for liquid activator</u>	<u>Inner packaging quantity (per receptacle) — for solid activator</u>	Total quantity per package	
Activator (Organic peroxide)	Plastics*	<u>n/a</u>	125 mL	500 g	5 kg	No
	Metal*	<u>n/a</u>	125 mL	500 g		
Base material Class 3 Packing Group II <del>or III</del>	Glass	<u>1.0 L</u>	<u>1.0 L</u> <u>n/a</u>	<u>1.0 L</u> <u>n/a</u>	5 kg	No
	Plastics	<u>5.0 L</u>	<u>5.0 L</u> <u>n/a</u>	<u>5.0 L</u> <u>n/a</u>		
	Metal	<u>5.0 L</u>	<u>5.0 L</u> <u>n/a</u>	<u>5.0 L</u> <u>n/a</u>		
<u>Activator (Organic peroxide)</u>	<u>Plastics*</u>	<u>n/a</u>	<u>125 mL</u>	<u>500 g</u>	10 kg	<u>No</u>
	<u>Metal*</u>	<u>n/a</u>	<u>125 mL</u>	<u>500 g</u>		
<u>Base material Class 3 Packing Group III</u>	<u>Glass</u>	<u>2.5 L</u>	<u>n/a</u>	<u>n/a</u>	10 kg	<u>No</u>
	<u>Plastics</u>	<u>10.0 L</u>	<u>n/a</u>	<u>n/a</u>		
	<u>Metal</u>	<u>10.0 L</u>	<u>n/a</u>	<u>n/a</u>		
*Including tubes						
<u>The total quantity of kits per package is to be calculated on a one-to-one basis of their volume, i.e. 1 L equal to 1 kg.</u>						

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### Packing Instruction Y370

Limited quantities  
Passenger and cargo aircraft for UN 3269 (Packing Group II or III) only

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COMBINATION PACKAGINGS							SINGLE PACKAGINGS
Packing conditions	Inner packaging (see 6.3.2)	<u>Inner packaging quantity (per receptacle) — for base liquid material</u>	<u>Inner packaging quantity (per receptacle) — for liquid activator</u>	<u>Inner packaging quantity (per receptacle) — for solid activator</u>	Total quantity per package	<u>Total gross mass per package</u>	
Activator (Organic peroxide)	Plastics*	<u>n/a</u>	30 mL	100 g	1 kg	<u>30 kg</u>	No
	Metal*	<u>n/a</u>	30 mL	100 g			
Base material Class 3 Packing Group II <del>or III</del>	Glass	<u>1.0 L</u>	<u>1.0 L</u> <u>n/a</u>	<u>1.0 L</u> <u>n/a</u>			
	Plastics	<u>1.0 L</u>	<u>1.0 L</u> <u>n/a</u>	<u>1.0 L</u> <u>n/a</u>			
	Metal	<u>1.0 L</u>	<u>1.0 L</u> <u>n/a</u>	<u>1.0 L</u> <u>n/a</u>			
<u>Activator (Organic peroxide)</u>	<u>Plastics*</u>	<u>n/a</u>	<u>30 mL</u>	<u>100 g</u>			
	<u>Metal*</u>	<u>n/a</u>	<u>30 mL</u>	<u>100 g</u>			
<u>Base material Class 3 Packing Group III</u>	<u>Glass</u>	<u>2.5 L</u>	<u>n/a</u>	<u>n/a</u>			
	<u>Plastics</u>	<u>5.0 L</u>	<u>n/a</u>	<u>n/a</u>			
	<u>Metal</u>	<u>5.0 L</u>	<u>n/a</u>	<u>n/a</u>			

\*Including tubes

The total quantity of kits per package is to be calculated on a one-to-one basis of their volume, i.e. 1 L equal to 1 kg.

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