International Civil Aviation Organization

DGP-WG/16-WP/52
11/10/16

WORKING PAPER

DANGEROUS GOODS PANEL (DGP)
WORKING GROUP MEETING (DGP-WG/16)

Montreal, 17 to 21 October 2016

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 2019-2020 Edition*

2.3: Part 3 — Dangerous Goods List, Special Provisions and Limited and Excepted Quantities

EXCEPTED QUANTITY LIMITS FOR UN 1219

(Presented by the Dangerous Goods Advisory Council (DGAC))

SUMMARY

The Dangerous Goods Advisory Council (DGAC) presented a working paper at the 49th Session of the UN Subcommittee of Experts on the transport of Dangerous Goods (ST-SG-AC.10-C.3-2016-40e) which proposed an amendment to the quantity limitations on the transport of UN 1219 — **Isopropanol**. While the subcommittee did not agree with the proposed amendment, it was suggested that the view of the ICAO Dangerous Goods Panel should be obtained.

In consideration of the comments made by the Subcommittee, this working paper proposes the adoption of a new special provision which would allow for flexibility in the excepted quantities permitted for specific UN numbers. The proposed special provision allows for UN 1219 — **Isopropanol** which is assigned E code E2 (30 mL inner, 500 mL) to be transported under the excepted quantity provisions when packaged as 1 mL inner, 1 L outer.

Action by the DGP-WG: The DGP-WG is invited to:

a) adopt a new special provision which would allow for flexibility in the excepted quantities permitted for specific UN numbers as shown in Appendix A to this working paper.

b) add Special Provision AXXX to Column 7 of Table 3-1 for the entry **Isopranol** — UN 1219 as shown in Appendix A to this working paper.

1. INTRODUCTION

1.1 The working group will be aware that small quantities of dangerous goods are necessary to provide for the preparation and sterilization of materials and equipment for health care purposes. Small quantities of Isopropanol (1 mL) are commonly used for these applications. The industry standard is to distribute these sterilization ampoules in lots of 1 000 which prohibits the application of either the de minimis or the excepted quantity derogations of the Technical Instructions.

1.2 In a number of instances, the Technical Instructions provide for flexibility in package quantities to address operational constraints by ensuring an equivalent level of safety is maintained. For example:

a) Forbidden materials (UN 2014, UN 1040) for sterilization purposes can be shipped as dangerous goods in excepted quantities with a maximum net quantity per inner packaging of 30 mL and a specified maximum net quantity per outer packaging provided certain packaging requirements are met (see Special Provisions A75 and A131).

b) Specimens containing flammable liquids (UN 1170, UN 1198, UN 1987, UN 1219) that currently are assigned an E code of E2 can be shipped as “Not Restricted” with a maximum net quantity per inner packaging of 30 mL and a maximum net quantity per outer packaging of 1 L provided certain packaging and marking requirements are met (see Special Provision A180).

c) Dangerous goods that are assigned an E Code of E2 are not subject to the Instructions when the maximum net quantity per inner packaging is limited to 1 mL for liquids and the maximum net quantity per outer packaging does not exceed 100 mL for liquids provided certain packaging requirements are met (see de minimis quantities).

1.3 The proposal is to assign a new special provision to UN 1219 which limits the inner packaging quantity 1 mL (cf. E2 value of 30 mL) while increasing the outer packaging limit to 1 Litre (cf. E2 value of 500 mL). In effect, the hazard communication, marking, packaging capability, design, and testing applicable to excepted quantities are applicable to de minimis quantities.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to:

a) adopt a new special provision which would allow for flexibility in the excepted quantities permitted for specific UN numbers as shown in Appendix A to this working paper.

b) Special Provision AXXX to be added to Column 7 of Table 3-1 for the entry **Isopranol** — UN 1219 as shown in Appendix A to this working paper.

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APPENDIX A

PROPOSED AMENDMENT TO PART 3 OF 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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Table 3-2. Special provisions

TIs	*UN*	
xxx		Irrespective of the limits specified by the code in Column 7 of Table 3-1, articles such as sterilization devices, when containing less than 1 mL per inner packaging with more than 500 mL but not more than 1 000 mL (1 L) per outer packaging, may be transported on passenger and cargo aircraft in accordance with the provisions of 3;5.

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Chapter 2

ARRANGEMENT OF THE DANGEROUS GOODS LIST (TABLE 3-1)

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Table 3-1. Dangerous Goods List

Name	*UN No.*	*Class or division*	*Subsidiary risk*	*Labels*	*State variations*	*Special provisions*	*UN packing group*	*Excepted quantity*	*Passenger aircraft*		*Cargo aircraft*	
									Packing instruction	*Max. net quantity per package*	*Packing instruction*	*Max. net quantity per package*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
Isopropanol	1219	9		Liquid flammable		A180 AXXX		E0	353 Y341	5L 1L	364	60 L

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APPENDIX B

EXISTING SPECIAL PROVISIONS

Part 3

DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND LIMITED AND EXCEPTED QUANTITIES

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Chapter 3

SPECIAL PROVISIONS

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UN 2014 — **Hydrogen peroxide, aqueous solution**

TIs	*UN*	
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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 indication of “forbidden” in columns 10 to 13 of Table 3-1, provided such packagings were first subjected to comparative fire testing. Comparative fire testing 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 200°C. Packagings may include a vent to permit the slow escape of gas (i.e. not more than 0.1 mL/hour per 30 mL inner packaging at 20°C) produced from gradual decomposition. The requirements of 4;1.1.6, 4;1.1.12 and 4;7.1.2 do not apply.
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UN1040 — **Ethylene oxide**

TIs	*UN*	
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A131	(342)	Glass inner receptacles (such as ampoules or capsules) intended only for use in sterilization devices, when containing less than 30 mL of ethylene oxide per inner packaging with not more than 300 mL per outer packaging, may be transported in accordance with the provisions in 3;5, irrespective of the indication of “forbidden” in columns 10 to 13 of Table 3-1, provided that: a) after filling, each glass inner receptacle has been determined to be leak-tight by placing the glass inner receptacle in a hot water bath at a temperature, and for a period of time, sufficient to ensure that an internal pressure equal to the vapour pressure of ethylene oxide at 55°C is achieved. Any glass inner receptacle showing evidence of leakage, distortion or other defect under this test must not be transported under the terms of this special provision;

TIs	*UN*	
		b) in addition to the packaging required by 3;5.2, each glass inner receptacle is placed in a sealed plastic bag compatible with ethylene oxide and capable of containing the contents in the event of breakage or leakage of the glass inner receptacle; and c) each glass inner receptacle is protected by a means of preventing puncture of the plastic bag (e.g. sleeves or cushioning) in the event of damage to the packaging (e.g. by crushing).

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UN1170 — **Ethyl Alcohol**
UN1198 — **Formaldehyde solution, flammable**
UN1987 — **Alcohols, n.o.s.**
UN1219 — **Isopropanol**

TIs	*UN*	

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	A180	Non-infectious specimens, such as specimens of mammals, birds, amphibians, reptiles, fish, insects and other invertebrates containing small quantities of UN 1170, UN 1198, UN 1987 or UN 1219 are not subject to these Instructions provided the following packing and marking requirements are met: a) specimens are: 1) wrapped in paper towel and/or cheesecloth moistened with alcohol or an alcohol solution and then placed in a plastic bag that is heat-sealed. Any free liquid in the bag must not exceed 30 mL; or 2) placed in vials or other rigid containers with no more than 30 mL of alcohol or an alcohol solution; b) the prepared specimens are then placed in a plastic bag that is then heat-sealed; c) the bagged specimens are then placed inside a another plastic bag with absorbent material then heat-sealed; d) the finished bag is then placed in a strong outer packaging with suitable cushioning material; e) the total quantity of flammable liquid per outer packaging must not exceed 1 L; and f) the completed package is marked “scientific research specimens, not restricted Special Provision A180 applies”. The words “not restricted” and the special provision number A180 must be provided on the air waybill when an air waybill is issued.

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