



DANGEROUS GOODS PANEL (DGP)

TWENTY-EIGHTH MEETING

Virtual, 15 to 19 November 2021

Agenda Item 3: Facilitating safe transport of dangerous goods by air (Ref: REC-A-DGS-2023)

LARGE ARTICLES CONTAINING DANGEROUS GOODS N.O.S.

(Presented by T. Muller and D. Brennan)

SUMMARY

This working paper proposes an amendment to the special provisions and packing instructions developed for UN 3538 — **Articles containing non-flammable, non-toxic gas, n.o.s.** and UN 3548 — **Articles containing miscellaneous dangerous goods, n.o.s.** and approved at the DGP Working Group Meeting (DGP-WG/21, 24 to 28 May 2021).

It is proposed to allow lithium cells and batteries that fully comply with the provisions of Section II of Packing Instruction 967 or Packing Instruction 970, as applicable.

Action by the DGP: The DGP is invited to consider the proposals set out in the appendix to this working paper.

1. INTRODUCTION

1.1 At the DGP Working Group Meeting in 2021 (DGP-WG/21, 24 to 28 May 2021), a proposal (see paragraph 3.2.2.22 of the DGP-WG/21 Report) was accepted to allow for transport on both passenger and cargo aircraft under well-defined conditions UN 3538 — **Articles containing non-flammable, non toxic gas, n.o.s.** and UN 3548 — **Articles containing miscellaneous dangerous goods, n.o.s.**

1.2 The special provisions and packing instructions agreed allow UN 3538 and UN 3548 under condition the only dangerous goods contained in the article are respectively a Division 2.2 gas without a subsidiary hazard and excluding refrigerated liquefied gases and gases forbidden on passenger aircraft or an environmentally hazardous substance.

1.3 Recently it has been brought to our attention that some of these articles such as magnetic resonance imaging (MRI) scanners may also contain some small lithium cells or batteries. Despite the fact

that paragraph 2;0.6.2 of the Technical Instructions allows articles to contain in addition lithium batteries we believe that, in order to avoid confusion and to enhance safety and hazard communication, the new Special Provisions A224 and A225 and Packing Instructions 222 and 975 agreed at DGP-WG/21 should be amended to allow in addition lithium cells or batteries but only when fully in compliance with the applicable provisions of Section II of Packing Instruction 967 or Packing Instruction 970.

2. ACTION BY THE DGP

2.1 The DGP is invited to consider the proposals set out in the appendix to this working paper.

APPENDIX

PROPOSED AMENDMENT TO PARTS 3 AND 4 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

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The following proposed amendment is based on new Special Provision A224 that was agreed at DGP-WG/21 (see paragraph 3.2.2.22 of the DGP-WG/21 Report)

A224 UN 3548 — **Articles containing miscellaneous dangerous goods, n.o.s.** may be transported on passenger and cargo aircraft irrespective of the indication of “forbidden” in columns 10 to 13 of Table 3-1, provided:

- a) with the exception of lithium cells or batteries that fully comply with the Section II provisions of Packing Instruction 967 or Packing Instruction 970, as applicable, the only dangerous goods contained in the article is an environmentally hazardous substance;
- b) the articles are packed in accordance with Packing Instruction 975; and
- c) reference to Special Provision A224 is made on the dangerous goods transport document as required by Part 5;4.1.5.8

All other provisions of these Instructions apply. If the above conditions are met, the requirements of Special Provision A2 do not apply.

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The following proposed amendment is based on new Special Provision A225 that was agreed at DGP-WG/21 (see paragraph 3.2.2.22 of the DGP-WG/21 Report)

A225 UN 3538 — **Articles containing non-flammable, non-toxic gas, n.o.s.** may be transported on passenger and cargo aircraft irrespective of the indication of "forbidden" in columns 10 to 13 of Table 3-1, provided:

- a) with the exception of lithium cells or batteries that fully comply with the Section II provisions of Packing Instruction 967 or Packing Instruction 970, as applicable, the only dangerous goods contained in the article is a Division 2.2 gas without a subsidiary hazard, but excluding refrigerated liquefied gases and gases forbidden for transport on passenger aircraft;
- b) the articles are packed in accordance with Packing Instruction 222; and
- c) reference to Special Provision A225 is made on the dangerous goods transport document as required by Part 5;4.1.5.8.

All other provisions of these Instructions apply. If the above conditions are met, the requirements of Special Provision A2 do not apply.

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Part 4**PACKING INSTRUCTIONS**

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The following proposed amendment is based on new Packing Instruction 222 that was agreed at DGP-WG/21 (see paragraph 3.2.2.22 of the DGP-WG/21 Report)

Packing Instruction 222

Passenger and cargo aircraft for UN 3538 only

Introduction

This packing instruction is only permitted for articles which do not have an existing proper shipping name and which contain only gases of Division 2.2 without a subsidiary hazard, but excluding refrigerated liquefied gases and gases forbidden for transport on passenger aircraft, where the quantity of the Division 2.2 gas exceeds the quantity limits for UN 3363 as prescribed in Packing instruction 962. In addition to the Division 2.2 gas, the article may also contain lithium cells or batteries that comply with the applicable provisions of Section II of Packing Instruction 967 or Packing Instruction 970.

General requirements

Part 4;1.1.1, 4;1.1.3, 4;1.1.12 and 4;2 requirements must be met.

<i>UN number and proper shipping name</i>	<i>Maximum net quantity of gas — passenger</i>	<i>Maximum net quantity of gas — cargo</i>
UN 3538 Articles containing non-flammable, non-toxic gas, n.o.s.*	75 kg	150 kg

ADDITIONAL PACKING REQUIREMENTS

- Packagings must meet the Packing Group II performance requirements.
- Receptacles within articles containing gases must meet the requirements of 4;4.1.1 and 6;5 as appropriate or meet a national or regionally recognized pressure receptacle standard such as the European Pressure Equipment Directive (2014/68/EU) or ASME Section VII, Div.1 R that is capable of providing an equivalent level of protection as Packing Instructions 200 or 219.
- Articles must be packed to prevent movement and inadvertent operation during normal conditions of transport.

ROBUST ARTICLES

Robust articles may alternatively be transported in strong outer packagings constructed of suitable material and of adequate strength and design in relation to the packaging capacity and its intended use. The packagings must achieve a level of protection that is at least equivalent to that provided by 6;1. Articles may be transported unpackaged or on pallets when the dangerous goods are afforded equivalent protection by the article in which they are contained. In such cases the additional requirement related to Packing Group II performance requirements and the requirement for UN specification packagings do not apply.

OUTER PACKAGINGS (see 6;3.1)

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (1N2)
Plastics (1H2)
Plywood (1D)
Steel (1A2)

Jerricans

Aluminium (3B2)
Plastics (3H2)
Steel (3A2)

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The following proposed amendment is based on new Packing Instruction 975 that was agreed at DGP-WG/21 (see paragraph 3.2.2.22 of the DGP-WG/21 Report

Packing Instruction 975

Passenger and cargo aircraft for UN 3548 only

Introduction

This packing instruction is only permitted for articles which do not have an existing proper shipping name and which contain only environmentally hazardous substances where the quantity of the environmentally hazardous substance in the article exceeds 5 L or 5 kg. In addition to the environmentally hazardous substance, the article may also contain lithium cells or batteries that comply with the applicable provisions of Section II of Packing Instruction 967 or Packing Instruction 970.

General requirements

Part 4;1.1.1, 4;1.1.3, 4;1.1.12 and 4;2 requirements must be met.

<i>UN number and proper shipping name</i>	<i>Quantity — passenger</i>	<i>Quantity — cargo</i>
UN 3548 Articles containing miscellaneous dangerous goods, n.o.s.*	No limit	No limit

ADDITIONAL PACKING REQUIREMENTS

- Packagings must meet the Packing Group II performance requirements.
- Receptacles containing liquids or solids within articles must be constructed of suitable materials and secured in the article in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents into the article itself or the outer packaging.
- Receptacles containing liquids with closures must be packed with their closures correctly oriented. The receptacles must in addition conform to the internal pressure test provisions of 6;4.5.
- Receptacles that are liable to break or be punctured easily, such as those made of glass or of certain plastics materials must be properly secured, and any leakage of the contents must not substantially impair the protective properties of the article or of the outer packaging.
- Where there is no receptacle within the article, the article must fully enclose the dangerous goods and prevent their release under normal conditions of transport.
- Articles must be packed to prevent movement and inadvertent operation during normal conditions of transport.

ROBUST ARTICLES

Robust articles may alternatively be transported in strong outer packagings constructed of suitable material and of adequate strength and design in relation to the packaging capacity and its intended use. The packagings must achieve a level of protection that is at least equivalent to that provided by 6;1. Articles may be transported unpackaged or on pallets when the dangerous goods are afforded equivalent protection by the article in which they are contained. In such cases the additional requirement related to Packing Group II performance requirements and the requirement for UN specification packagings do not apply.

OUTER PACKAGINGS (see 6;3.1)*Boxes*

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (1N2)
Plastics (1H2)
Plywood (1D)
Steel (1A2)

Jerricans

Aluminium (3B2)
Plastics (3H2)
Steel (3A2)

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