



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)  
WORKING GROUP MEETING (DGP-WG/24)**

**Montreal, 21 to 25 October 2024**

**Agenda Item 3: Facilitating safe transport of dangerous goods by air (Ref: REC-A-DGS-2027)**

**PACKING INSTRUCTIONS FOR ARTICLES CONTAINING DANGEROUS GOODS UN 3537,  
UN 3538, UN 3540, UN 3541, UN 3546, UN 3547 & UN 3548**

(Presented by T. Muller)

**SUMMARY**

This working paper proposes to amend the applicable Packing Instructions in the Supplement for the different entries for “Articles containing dangerous goods” UN 3537, UN 3538, UN 3540, UN 3541, UN 3546, UN 3547 & UN 3548 in order to remove the inconsistencies with Part 2;0.6 and to harmonize with the UN Model Regulations.

**Action by the DGP-WG:** Action by the DGP-WG is in paragraph 3.

**1. INTRODUCTION**

1.1 Except for some articles classified as UN 3538 — **Articles containing non-flammable, non-toxic gas, n.o.s.** or as UN 3548 — **Articles containing miscellaneous dangerous goods, n.o.s.**, the different entries for “Articles” are forbidden for air transport but can be authorized for transport either under the conditions of Special Provision A2 (applicable to UN 3537, UN 3538, UN 3540, UN 3541, UN 3546, UN 3547 and UN 3548) or with an exemption (applicable to UN 3539, UN 3542, UN 3543, UN 3544 or UN 3545).

1.2 For the entries that may be transported on Cargo Aircraft Only under the conditions of Special Provision A2, Tables S-3-1 “Supplementary Dangerous Goods List” in Part S-3, Chapter 3, and Chapter 4 provide information on the applicable packing instructions that should be used, as shown in the following extract from Table S-3-1:

Name	UN No.	Class or division	Subsidiary hazard	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger and cargo aircraft		Cargo aircraft only	
									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
Articles containing a substance which emits flammable gas in contact with water, n.o.s.*	3543	4.3	See 2;0.6	Danger if wet		A333			FORBIDDEN		FORBIDDEN	
Articles containing corrosive substance, n.o.s.*	3547	8	See 2;0.6	Corrosive		A2 A333			FORBIDDEN		See 877	
Articles containing flammable liquid, n.o.s.*	3540	3	See 2;0.6	Liquid flammable		A2 A333			FORBIDDEN		378	60 L
Articles containing flammable solid, n.o.s.*	3541	4.1	See 2;0.6	Solid flammable		A2 A333			FORBIDDEN		400	50 kg
Articles containing miscellaneous dangerous goods, n.o.s.*	3548	9	See 2;0.6	Miscellaneous		A2 A224 A333			FORBIDDEN		See 973	
Articles containing organic peroxide, n.o.s.*	3545	5.2	See 2;0.6	Organic peroxide		A333			FORBIDDEN		FORBIDDEN	
Articles containing oxidizing substance, n.o.s.*	3544	5.1	See 2;0.6	Oxidizer		A333			FORBIDDEN		FORBIDDEN	
Articles containing toxic substance, n.o.s.*	3546	6.1	See 2;0.6	Toxic		A2 A333			FORBIDDEN		See 600	
Articles containing flammable gas, n.o.s.*	3537	2.1	See 2;0.6	Gas flammable		A2 A333			FORBIDDEN		221	150 kg
Articles containing non-flammable, non toxic gas, n.o.s.*	3538	2.2	See 2;0.6	Gas non-flammable		A2 A225 A333 A335			FORBIDDEN		221	No limit

1.3 All of these packing instructions have been developed based on Packing Instruction P006 of the UN Model Regulations. At the twenty-sixth meeting of the DGP (DGP/26, 16 to 27 October 2017), the panel agreed to include a separate packing instruction for each class assigned to the new entries, instead of just one packing instruction.

1.4 It should be noted that the listed packing instruction for UN 3540 — **Articles containing flammable liquids, n.o.s.**, as stated in Table S-3-1 “Supplementary Dangerous Goods List” of the Supplement, is incorrect and must read 379 instead of 378.

## 2. INCONSISTENCIES BETWEEN PART 2;0.6 AND THE PACKING INSTRUCTIONS FOR ARTICLES

2.1 Part 2;0.6 explains how articles containing dangerous goods that do not have an existing entry in the dangerous goods list must be classified and identified.

2.2 Articles that contain dangerous goods allowed under the provisions for limited quantities in accordance with Part 3;4.1 and that fall within the quantity limits specified in Packing Instruction 962 must be classified as UN 3363.

2.3 Articles containing dangerous goods where the net quantity of these dangerous goods exceeds the limits of Packing Instruction 962, but still contain dangerous goods permitted as limited quantities within the quantity limits specified in column 7(a) of the UN Model Regulations, must also be classified as UN 3363. However, they may only be transported with the prior approval of the State of Origin and the State of the Operator under the conditions established by those authorities (see Special Provision A107).

2.4 When the above-mentioned conditions cannot be met, e.g. the dangerous goods in the articles are not allowed under the provisions for limited quantities and/or the quantities exceed the quantities for UN 3363, the article must be assigned to the appropriate UN number (from UN 3537 until UN 3548).

2.5 It has been brought to our attention that all the packing instructions in the Supplement for the articles which can be transported in accordance with Special Provision A2 (Packing Instructions 221, 379, 400, 600, 877 and 973) contain a condition which seems to be inconsistent with the classification and identification criteria of Part 2;0.6. Each of these packing instructions limits the use of the applicable entry for articles only to dangerous goods permitted under the provisions for limited quantities in Part 3;4.1.2. For example:

**Packing Instruction 221**  
Cargo aircraft only for UN 3537 and UN 3538 only

**General requirements**

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

This entry applies to articles which do not have an existing proper shipping name and which contain only dangerous goods permitted under Part 3;4.1.2 of the Technical Instructions, and exceed both the quantity limits for UN 3363 as prescribed in Special Provision A107 and the quantity limits permitted by Special Provision 301 of the UN Model Regulations.

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2.6 This additional restriction in the Packing Instructions makes the several entries for articles almost useless in the Technical Instructions. We believe this has never been the intention when the Packing Instructions were developed. Packing Instruction P006 of the UN Model Regulations which has served as the basics for the development of the different Packing Instructions in the Supplement does also not contain this additional restriction.

### 3. ACTION BY THE DGP-WG

3.1 The DGP-WG is invited to agree to the amendments proposed to the Supplement to the Technical Instructions as presented in the appendix to this working paper to address the issues raised in this working paper.

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APPENDIX

PROPOSED AMENDMENT TO THE SUPPLEMENT TO THE TECHNICAL INSTRUCTIONS

Part S-3

**DANGEROUS GOODS LIST,  
SPECIAL PROVISIONS AND QUANTITY LIMITATIONS**

**(ADDITIONAL INFORMATION  
FOR PART 3 OF THE  
TECHNICAL INSTRUCTIONS)**

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Name	UN No.	Class or division	Subsidiary hazard	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger and cargo aircraft		Cargo aircraft only	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4		6	7	8	9	10	11	12	13
Articles containing flammable liquid, n.o.s.*	3540	3	See 2;0.6	Liquid flammable		A2 A88 A333	I	E5	FORBIDDEN		( <del>378</del> 379)	(60 L)

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## Part S-4

# PACKING INSTRUCTIONS

## (ADDITIONAL INFORMATION FOR PART 4 OF THE TECHNICAL INSTRUCTIONS)

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### Packing Instruction 221

Cargo aircraft only for UN 3537 and UN 3538 only

#### General requirements

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

This entry applies to articles which do not have an existing proper shipping name and ~~which contain only dangerous goods permitted under Part 3;4.1.2 of the Technical Instructions, and exceed both the quantity limits for UN 3363 as prescribed in Special Provision A107 and the quantity limits permitted by Special Provision 301 of the UN Model Regulations~~ which do not comply with the conditions as prescribed either in Part 2; 6.0.a) or in Part 2;6.0 b).

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### Packing Instruction 379

Cargo aircraft only for UN 3540 only

#### General requirements

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

This entry applies to articles which do not have an existing proper shipping name and ~~which contain only dangerous goods permitted under Part 3;4.1.2 of the Technical Instructions, and exceed both the quantity limits for UN 3363 as prescribed in Special Provision A107 and the quantity limits permitted by Special Provision 301 of the UN Model Regulations~~ which do not comply with the conditions as prescribed either in Part 2; 6.0.a) or in Part 2;6.0 b).

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**Packing Instruction 400**

Cargo aircraft only for UN 3541 only

**General requirements**

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

This entry applies to articles which do not have an existing proper shipping name and ~~which contain only dangerous goods permitted under Part 3;4.1.2 of the Technical Instructions, and exceed both the quantity limits for UN 3363 as prescribed in Special Provision A107 and the quantity limits permitted by Special Provision 301 of the UN Model Regulations~~ which do not comply with the conditions as prescribed either in Part 2; 6.0.a) or in Part 2;6.0 b).

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**Packing Instruction 600**

Cargo aircraft only for UN 3546 only

**General requirements**

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

This entry applies to articles which do not have an existing proper shipping name and ~~which contain only dangerous goods permitted under Part 3;4.1.2 of the Technical Instructions, and exceed both the quantity limits for UN 3363 as prescribed in Special Provision A107 and the quantity limits permitted by Special Provision 301 of the UN Model Regulations~~ which do not comply with the conditions as prescribed either in Part 2; 6.0.a) or in Part 2;6.0 b).

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**Packing Instruction 877**

Cargo aircraft only for UN 3547 only

**General requirements**

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

This entry applies to articles which do not have an existing proper shipping name and ~~which contain only dangerous goods permitted under Part 3;4.1.2 of the Technical Instructions, and exceed both the quantity limits for UN 3363 as prescribed in Special Provision A107 and the quantity limits permitted by Special Provision 301 of the UN Model Regulations~~ which do not comply with the conditions as prescribed either in Part 2; 6.0.a) or in Part 2;6.0 b).

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### **Packing Instruction 973**

Cargo aircraft only for UN 3548 only

#### **General requirements**

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

This entry applies to articles which do not have an existing proper shipping name and ~~which contain only dangerous goods permitted under Part 3;1.1.2 of the Technical Instructions, and exceed both the quantity limits for UN 3363 as prescribed in Special Provision A107 and the quantity limits permitted by Special Provision 301 of the UN Model Regulations~~ which do not comply with the conditions as prescribed either in Part 2; 6.0.a) or in Part 2;6.0 b).

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