



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)**

**TWENTY-EIGHTH MEETING**

**Virtual, 15 to 19 November 2021**

**Agenda Item 1: Harmonizing ICAO dangerous goods provisions with UN Recommendations on the Transport of Dangerous Goods (Ref: REC-A-DGS-2023)**

**1.2: Develop proposals, if necessary, for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284)* for incorporation in the 2023-2024 Edition**

**MISCELLANEOUS AMENDMENTS PROPOSED TO ADDRESS ALIGNMENT WITH THE UN MODEL REGULATIONS**

(Presented by the Rapporteur of the DGP Working Group on UN Harmonization)

**SUMMARY**

This working paper proposes a number of amendments to the provisions of the Technical Instructions to address inconsistencies or gaps between the provisions in the UN Model Regulations and those in the Technical Instructions.

**Action by the DGP:** The DGP is invited to consider the amendments as proposed in the appendix to this working paper.

**1. INTRODUCTION**

1.1 Following the review of the changes to the Technical Instructions arising from alignment with the changes to the 22<sup>nd</sup> revised edition of the UN Model Regulations, the DGP Working Group on UN Harmonization (DGP-WG/UN Harmonization) focussed on updating the document *Guidance for the Panel to Aid in Preparation of the Technical Instructions and Supporting Documents* (DGP Guidance document).

1.2 As part of the review and revision to the DGP Guidance document, the working group identified some areas in the Technical Instructions where there was incomplete alignment with the provisions of the UN Model Regulations and some anomalies in the provisions of the Technical Instructions.

1.3 This working paper proposes some miscellaneous amendments to the Technical Instructions to address the issues identified by the working group.

## 1.4 Part 2 — Classification

1.4.1 Part 2;4.2.3.2.1 related to the classification of self-reactive substances of Division 4.1 and Part 2;5.3.2.2 related to the classification of organic peroxides do not align to the equivalent paragraphs in the UN Model Regulations, which provide more detail on the classification of these substances. For example, paragraph 2.4.2.3.2.1 in the UN Model Regulations reads as follows:

Self-reactive substances are classified into seven types according to the degree of danger they present. The types of self-reactive substance range from type A, which may not be accepted for transport in the packaging in which it is tested, to type G, which is not subject to the provisions for self-reactive substances of Division 4.1. The classification of types B to F is directly related to the maximum quantity allowed in one packaging.

1.4.2 The view of DGP-WG/UN Harmonization is that the UN text should be adopted with a slight modification into the Technical Instructions as it provides more complete information than that currently in the Technical Instructions.

## 1.5 Part 3 — Dangerous Goods List (Table 3-1)

1.6 In considering the guidance, it was identified that there is an inconsistency in the treatment of UN 3221 — **Self-reactive liquid type B** and UN 3231 — **Self-reactive liquid type B, temperature controlled**, which are shown as forbidden/forbidden and which in theory could be shipped under an exemption. This is compared to Self-reactive solid type B and Self-reactive solid type B, temperature controlled and to the organic peroxides type B solid and liquid, which are listed in Table 3-1 in light type without a UN number or division number and therefore are forbidden under any circumstances.

1.7 The classification flowchart in the UN Model Regulations for the self-reactive substances of Division 4.1 and the organic peroxides identifies that substances of type B have explosive properties. As per Part 1;2.1 “Any article or substance which, as presented for transport, is liable to explode ... must not be carried on aircraft under any circumstances.”

1.8 DGP-WG/UN Harmonization therefore believes that the entries for self-reactive liquid type B should be aligned to those for the solid entries for organic peroxides in type B and made forbidden under any circumstances.

## 1.9 Part 3 — Special Provisions (Table 3-2)

1.10 It was identified that Special Provision A57, which is assigned to various Division 4.1 nitrocellulose entries, has no corresponding special provision in the UN Model Regulations, although the text of Special Provision A57 appears to be derived from requirements in the UN packing instructions, P406 and for nitrocellulose membrane filters, P411.

1.11 In reviewing the relevant packing instructions in the Technical Instructions (Packing Instructions 452, 453, 458 and Y458), the requirement specified in Special Provision A57 is already included in these packing instructions. As such, the view of DGP-WG/UN Harmonization is that Special Provision A57 can be changed to become “not used”.

2. **ACTION BY THE DGP**

2.1 The DGP is invited to consider the amendments as proposed in the appendix to this working paper.

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APPENDIX

PROPOSED AMENDMENT TO PARTS 2 AND 3 OF THE TECHNICAL INSTRUCTIONS

Part 2

CLASSIFICATION OF DANGEROUS GOODS

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Chapter 4

**CLASS 4 — FLAMMABLE SOLIDS;  
SUBSTANCES LIABLE TO SPONTANEOUS  
COMBUSTION; SUBSTANCES WHICH,  
IN CONTACT WITH WATER,  
EMIT FLAMMABLE GASES**

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4.2.3 Division 4.1 — Self-reactive substances

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UN Model Regulations, 2.4.2.3.2

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4.2.3.2 *Classification of self-reactive substances*

4.2.3.2.1 Self-reactive substances are classified into seven types according to the degree of danger they present. The types of self-reactive substance range from type A, which is forbidden in any mode of transport, to type G, which is not subject to the provisions for self-reactive substances of Division 4.1. The classification of types B to F is directly related to the maximum quantity allowed in one packaging.

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Chapter 5

**CLASS 5 — OXIDIZING SUBSTANCES; ORGANIC PEROXIDES**

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5.3.2 Classification of organic peroxides

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UN Model Regulations, 2.5.3.2.2

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5.3.2.2 Organic peroxides are classified into seven types according to the degree of danger they present. The types of organic peroxide range from type A, which is forbidden in any mode of transport, to type G, which is not subject to the provisions for organic peroxides of Division 5.2. The classification of types B to F is directly related to the maximum quantity allowed in one packaging.

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**Part 3**

**DANGEROUS GOODS LIST,  
SPECIAL PROVISIONS AND  
LIMITED AND EXCEPTED QUANTITIES**

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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 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

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<b>Nitrocellulose membrane filters</b> with not more than 12.6% nitrogen, by dry mass	3270	4.1		Solid flammable		A57 A73 A122	II	E2	458 Y458	1 kg 1 kg	458	15 kg
<b>Nitrocellulose</b> , with not more than 12.6% nitrogen, by dry mass, <b>mixture without plasticizer, without pigment</b>	2557	4.1		Solid flammable	BE 3	A67 A86 A217	II	E0	452	1 kg	453	15 kg
<b>Nitrocellulose</b> , with not more than 12.6% nitrogen, by dry mass, <b>mixture without plasticizer, with pigment</b>	2557	4.1		Solid flammable	BE 3	A67 A86 A217	II	E0	452	1 kg	453	15 kg

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
<b>Nitrocellulose</b> , with not more than 12.6% nitrogen, by dry mass, <b>mixture with plasticizer, without pigment</b>	2557	4.1		Solid flammable	BE 3	A57 A86 A217	II	E0	452	1 kg	453	15 kg
<b>Nitrocellulose</b> , with not more than 12.6% nitrogen, by dry mass, <b>mixture with plasticizer, with pigment</b>	2557	4.1		Solid flammable	BE 3	A57 A86 A217	II	E0	452	1 kg	453	15 kg
<b>Nitrocellulose with alcohol</b> , not less than 25% alcohol, by mass and not less than 12.6% nitrogen, by dry mass	2556	4.1		Solid flammable	BE 3	A57 A217	II	E0	452	1 kg	453	15 kg
<b>Nitrocellulose with water</b> , not less than 25% water by mass	2555	4.1		Solid flammable	BE 3	A57 A217	II	E0	452	1 kg	453	15 kg
<b>Self-reactive liquid type B*</b> <u>Self-reactive liquid type B*</u>	3221	4.1								FORBIDDEN	FORBIDDEN	
<b>Self-reactive liquid type B, temperature controlled*</b> <u>Self-reactive liquid type B, temperature controlled*</u>	3231	4.1								FORBIDDEN	FORBIDDEN	

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### Chapter 3

## SPECIAL PROVISIONS

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Table 3-2. Special provisions

*TIs UN*

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A57 Packagings must be so constructed that explosion is not possible by reason of increased internal pressure. Not used.

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