



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
WORKING GROUP MEETING (DGP-WG/22)**

Montréal, 21 to 25 November 2022

- Agenda Item 2: Managing air-specific safety risks and identifying anomalies (REC-A-DGS-2025)**
2.2: 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 2025-2026 Edition

**CONSOLIDATED AMENDMENTS TO THE TECHNICAL INSTRUCTIONS AND THE
SUPPLEMENT TO THE TECHNICAL INSTRUCTIONS TO ADDRESS IDENTIFIED ERRORS**

(Presented by P. Guo)

SUMMARY

This working paper contains draft amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) and the *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284SU) to address identified errors.

Action by the DGP-WG is in paragraph 3.

1. INTRODUCTION

1.1 This working paper contains a consolidated list of draft amendments to the Technical Instructions, as shown in Appendix A to this working paper, and the Supplement to the Technical Instructions, as shown in Appendix B to this working paper, to address identified errors.

1.2 The errors are obvious, and most of the proposals are editorial revisions.

2. JUSTIFICATION FOR AMENDMENTS

2.1 Packing Instruction 451

2.1.1 1-Hydroxybenzotriazole (1-HOBT) is assigned to UN 0508 and UN 3474. 1-HOBT monohydrate is stable. It will not lose its water at or above 45% RH (relative humidity) at ambient temperature. It will take more than 10 hours to convert it to the anhydrous 1-HOBT when monohydrated

1-HOBT is exposed to 60°C and <5% RH. Monohydrate 1-HOBT is not the mixture of water and anhydrous 1-HOBT (see ST/SG/AC.10/C.3/66/Add.1).

UN No.	Name and description	Class or division	UN packing group
0508	1-Hydroxybenzotriazole, anhydrous , dry or wetted with less than 20% water, by mass	1.3C	
3474	1-Hydroxybenzotriazole monohydrate	4.1	I

2.1.2 The proper shipping name shown for UN 3474 in Packing Instruction 451 is wrong, and misleads to anhydrous 1-HOBT. It is proposed to amend the Packing Instruction in the Technical Instructions and the Supplement to refer to the correct proper shipping name for UN 3474.

2.2 UN 3549

2.2.1 Attachment 1, Chapter 2 — List of n.o.s. and generic proper shipping names does not include UN 3549 — **Medical waste, Category A, affecting humans**, solid and UN 3549 — **Medical waste, Category A, affecting animals** only, solid. It is proposed that the two entries be added.

2.3 tert-Amylperoxy-3,5,5-trimethylhexanoate

2.3.1 The UN number for tert-Amylperoxy-3,5,5-trimethylhexanoate was changed from UN 3101 to UN 3105 — **Organic peroxide type D, liquid** in the 15th revised edition of the UN Model Regulations, and the subsidiary risks and remarks column was modified by removing reference to note 3 in 2008. Note 3 requires the application of an explosive subsidiary risk label, making transport by air forbidden under any circumstance. The corresponding amendments were not made to the Technical Instructions at that time, but were introduced in the 2023-2024 Edition thereby removing its forbidden under any circumstance status and allowing the substance on passenger and cargo aircraft. However, tert-Amylperoxy-3,5,5-trimethylhexanoate is still listed as FORBIDDEN under any circumstance in Table 3-1. It is therefore proposed to amend Table 3-1 accordingly.

3. ACTION BY THE DGP-WG

3.1 The DGP-WG is invited to:

- a) remove the forbidden under any circumstance status for tert-Amylperoxy-3,5,5-trimethylhexanoate in Table 3-1 and add a cross reference to UN 3105 — **Organic peroxide type D, liquid**, as shown in Appendix A to this working paper;
- b) amend the proper shipping name for UN 3474 in Packing Instruction 451 of the Technical Instructions and Packing Instruction 451 of the Supplement to read **1-Hydroxybenzotriazole monohydrate** as shown in Appendix A (Technical Instructions) and B (Supplement to the Technical Instructions) to this working paper; and
- c) amend Attachment 1;2 to include UN 3549 — **Medical waste, Category A, affecting humans**, solid and UN 3549 — **Medical waste, Category A, affecting animals** only, solid as shown in Appendix A to this working paper.

APPENDIX A

PROPOSED AMENDMENTS TO THE TECHNICAL INSTRUCTIONS

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 <i>1</i>	UN No. <i>2</i>	Class or division <i>3</i>	Subsidiary risk <i>4</i>	Labels <i>5</i>	State variations <i>6</i>	Special provisions <i>7</i>	UN packing group <i>8</i>	Excepted quantity <i>9</i>	Passenger aircraft		Cargo aircraft	
									Packing instruction <i>10</i>	Max. net quantity per package <i>11</i>	Packing instruction <i>12</i>	Max. net quantity per package <i>13</i>
tert-Amylperoxy-3,5,5-trimethylhexanoate see Organic peroxide type D, liquid (UN 3105)	FORBIDDEN											
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Part 4

PACKING INSTRUCTIONS

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Chapter 6

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

6.2 PACKING INSTRUCTIONS

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Packing Instruction 451					
Passenger and cargo aircraft — wetted explosives (Packing Group I)					
...					
COMBINATION PACKAGINGS					SINGLE PACKAGINGS
UN number and proper shipping name	Inner packaging (see 6;3.2)	Inner packaging quantity (per receptacle)	Total quantity per package — passenger	Total quantity per package — cargo	
...					
UN 3474 1-Hydroxybenzotriazole, anhydrous, wetted monohydrate	Glass Plastics	0.5 kg	0.5 kg	0.5 kg	No
...					

Attachment 1**LISTS OF PROPER SHIPPING NAMES**

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Chapter 2**LIST OF N.O.S. AND
GENERIC PROPER SHIPPING NAMES**

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THE MOST SPECIFIC APPLICABLE NAME MUST ALWAYS BE USED

<i>Class or Division</i>	<i>Subsidiary hazard</i>	<i>UN No.</i>	<i>Proper shipping name</i>
...			
Division 6.2			
<i>Specific entries</i>			
6.2		3373	Biological substance, Category B
6.2		3291	Biomedical waste, n.o.s.
6.2		3291	Clinical waste, unspecified, n.o.s
6.2		3291	Medical waste, n.o.s.
6.2		3291	Regulated medical waste, n.o.s.
<u>6.2</u>		<u>3549</u>	<u>Medical waste, Category A, affecting animals only, solid</u>
<u>6.2</u>		<u>3549</u>	<u>Medical waste, Category A, affecting humans, solid</u>

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APPENDIX B

PROPOSED AMENDMENT TO THE SUPPLEMENT TO THE TECHNICAL INSTRUCTIONS

Part S-4

PACKING INSTRUCTIONS

(ADDITIONAL INFORMATION
FOR PART 4 OF THE
TECHNICAL INSTRUCTIONS)

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Packing Instruction 451					
Passenger and cargo aircraft — wetted explosives (Packing Group I)					
...					
COMBINATION PACKAGINGS					SINGLE PACKAGINGS
UN number and proper shipping name	Inner packaging (see 6.3.2)	Inner packaging quantity (per receptacle)	Total quantity per package — passenger	Total quantity per package — cargo	
...					
UN 3474 1-Hydroxybenzotriazole; anhydrous, wetted <u>monohydrate</u>	Glass Plastics	0.5 kg	0.5 kg	0.5 kg	No
...					

— END —