

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

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Item 7 of the provisional agenda

**Global harmonization of transport of dangerous goods
regulations with the Model Regulations**

Information on recommendations made by the ICAO Dangerous Goods Panel

Submitted by the International Civil Aviation Organization (ICAO)

Introduction

1. The twenty-sixth meeting of the Dangerous Goods Panel (DGP/26) was held in Montréal from 16 to 27 October 2017. The panel followed two working group meetings also held in Montréal from 17 to 21 October 2016 (DGP-WG/16) and 24 to 28 April 2017 (DGP-WG/17). The panel made a final review of amendments proposed to the Technical Instructions in order to harmonize with the 20th revised edition of the UN Model Regulations and to address issues specific to air transport. Amendments agreed by DGP/26 are subject to Council approval. They will first be reviewed by the Air Navigation Commission (ANC) for onward submission to the Council during the first quarter of 2018. The full report of DGP/26 including all amendments agreed can be downloaded from <http://www.icao.int/safety/DangerousGoods/Pages/DGP26.aspx>.

2. This information paper highlights issues which the DGP determined should be brought to the attention of the 52nd Session of the Sub-Committee.

Amendments to Training Provisions

3. The panel agreed to incorporate revised training provisions which support a competency-based approach to training and assessment in the 2019-2020 Edition of the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) with a transitional period of two years before becoming mandatory. Draft provisions had been included in Attachment 4 to the 2017-2018 Edition of the Technical Instructions for the purpose of review and feedback to ICAO by States, international organizations and industry. The provisions contained in Attachment 4 to the 2017-2018 Edition were revised to address feedback received. This included the reinstatement of the high-level framework for general awareness, function-specific and safety training provided in the UN Model Regulations.

Provisions for samples of energetic materials

4. Provisions for samples of energetic materials to be assigned to UN 3223 — **Self-reactive liquid type C** or UN 3224 — **Self-reactive solid type C** were added as a new Part 2;0.5.4 of the Technical Instructions for the sake of alignment with the UN

Recommendations. It was noted that the UN provisions did not include an indication of how to describe the substances on the transport document. A requirement for the proper shipping name to be supplemented with the word "sample" was added to the Technical Instructions, with the assumption that it was an inadvertent omission by the UN Sub-Committee.

5. New special packing provisions PP94 and PP95 which were added to packing instruction P520 of the UN Model Regulations were incorporated in Packing Instruction 459 of the Technical Instructions. Editorial revisions were made to the provisions for the sake of simplification. The provisions in the Technical Instructions read as follows:

UN 3223 or UN 3224

Energetic samples classified in accordance with Part 2, Introductory Chapter, paragraph 5.4 may be carried under UN 3223 or UN 3224, as appropriate, provided that:

1. The quantity per individual inner cavity does not exceed 0.01 g for solids or 0.01 mL for liquids and the maximum net quantity per outer packaging does not exceed 20 g for solids or 20 mL for liquids, or in the case of mixed packing the sum of grams and millilitres does not exceed 20:

- (a) the samples are carried in microtiter plates or multi-titer plates made of plastics, glass, porcelain or stoneware as an inner packaging;
- (b) only combination packaging with outer packaging comprising boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1 and 4H2) are permitted; or

2. The maximum content of each inner packaging does not exceed 1 g for solids or 1 mL for liquids and the maximum net quantity per outer packaging does not exceed 56 g for solids or 56 mL for liquids, or in the case of mixed packing the sum of grams and millilitres does not exceed 56:

- (a) The individual substance is contained in an inner packaging of glass or plastics of maximum capacity of 30 mL placed in an expandable polyethylene foam matrix of at least 130 mm thickness having a density of 18 ± 1 g/L;
- (b) Within the foam carrier, inner packagings are segregated from each other by a minimum distance of 40 mm and from the wall of the outer packaging by a minimum distance of 70 mm. The package may contain up to two layers of such foam matrices, each carrying up to twenty-eight inner packagings;
- (c) The outer packaging consists only of corrugated fibreboard boxes (4G) having minimum dimensions of 60 cm (length) by 40.5 cm (width) by 30 cm (height) and minimum wall thickness of 1.3 cm.

When dry ice or liquid nitrogen is optionally used as a coolant for quality control measures, all applicable requirements of these Instructions must be met. Interior supports must be provided to secure the inner packagings in the original position after the ice or dry ice has dissipated. If ice is used, the outside packaging or overpack must be leakproof. If dry ice is used, the requirements in Packing Instruction 954 must be met. The inner and outer packagings must maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures which could result if refrigeration were lost.

Consistent use of term “material”

6. Inconsistencies with the usage of the term “material” throughout the Technical Instructions cause difficulties when it came to translating the provisions into different languages. The word has different meanings depending on the context in which it is used. Revisions were made to address these inconsistencies. Some of the revisions were to text that originated from the UN Model Regulations. These were:

Part 2, Chapter 3 (Classification of Dangerous Goods — Class 3, Flammable Liquids), of the Technical Instructions (2.3.2.1.1 of the UN Model Regulations):

3.2.1 Table 2-4 should be used for the determination of the packing group of a liquid that presents a hazard due to flammability. For liquids whose only hazard is flammability, the packing group for the ~~material~~ liquid is the packing group shown in Table 2-4. For a liquid possessing an additional hazard(s), the packing group, determined by using Table 2-4, and the packing group based on the severity of the additional hazard(s), must be considered. In such cases, the table of precedence of hazard characteristics appearing in Table 2-1 should be used to determine the correct classification of the liquid.

Part 3, Chapter 3 (Special provisions) (SP 163 of the UN Model Regulations):

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A72(163)A substance specifically listed by name in Table 3-1 must not be transported under this entry. ~~Materials~~ ~~Substances~~ transported under this entry may contain 20 per cent or less nitrocellulose provided the nitrocellulose contains not more than 12.6 per cent nitrogen.

Part 3, Chapter 5 (Dangerous Goods in Excepted Quantities) (3.5.1.4 a))UN Model Regulations):

5.6 DE MINIMIS QUANTITIES

Dangerous goods assigned to codes E1, E2, E4 or E5 are not subject to these Instructions when carried as cargo provided that:

- (a) the maximum net quantity ~~of material~~ per inner packaging is limited to 1 mL for liquids and gases and 1 g for solids;

Assignment of special provisions against entries for engines, machinery and vehicles

7. DGP agreed to assign Special Provision A176, which specifies requirements for metal hydride storage systems and aligns with SP 356 of the UN Model Regulations, to UN 3529 (engines and machines powered by flammable gas fuel cells). It had been already assigned to UN 3528 (engines and machinery powered by flammable liquid fuel cells) and UN 3166 (vehicles powered by flammable liquid fuel cells). The corresponding UN special provision (SP356) is not assigned to UN 3528 or UN 3529 in the Model Regulations, although it is assigned to all proper shipping names for UN 3166.