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Item 5 (b) of the provisional agenda

Proposals for amendments to annexes A and B of ADR: miscellaneous proposals

Temperature controlled transport

Transmitted by the Government of the Netherlands and the European Chemical Industry Council (Cefic)*

Summary

Executive summary:	Clarification of the scope of Chapter 7.1 and clarification of the interpretation of thermal insulation in sub-section 7.1.7.4.5 of ADR 2021 as well the use of containers for the carriage of temperature controlled substances in sub-section 7.1.7.4.7 of ADR 2021.
Action to be taken:	Amend the wording in the heading of Chapter 7.1 and the wording in subsections 7.1.7.4.5 and 7.1.7.4.7 based on proposals 1, 2 and 3.
Related documents:	ECE/TRANS/WP.15/246 (report from the 106 th session May 2019), paragraphs 21-22; ECE/TRANS/WP.15/2019/1; informal document INF.3 from the 106 th session; ECE/TRANS/WP.15/251 (report from the 108 th session November 2020), paragraphs 27-28; ECE/TRANS/WP.15/2020/1; informal document INF.11 from the 108 th session; ECE/TRANS/WP.15/253 (report from the 109 th session May 2021), paragraph 40 and informal document INF.4/Rev.1 from the 109 th session.

* A/75/6 (Sect.20), para 20.51.

Introduction

1. After discussion in the November 2020 session of the Working Party on document ECE/TRANS/WP.15/2020/1 and informal document INF.11 (United Kingdom) it was felt that further consideration should be given to Section 7.1.7 and the coherence with Chapter 9.6.
2. In informal document INF.4/Rev.1 the Netherlands and Cefic presented draft proposals that have been discussed during the May 2021 session of the Working Party. Delegations wishing to make comments on these draft amendment proposals were invited to submit them to the representatives of the Netherlands and Cefic with a view to preparing an official document for the next session.
3. The proposals below represent the outcome of the discussion between the representatives of the Netherlands and Cefic and are based on discussion of this topic during the various sessions of the Working Party.
4. The Working Party is invited to give its opinion on these proposals for amending ADR 2021.

Proposals

Proposal 1

5. Amend the heading of Chapter 7.1 to read (deleted wording stricken through):
~~“GENERAL PROVISIONS AND SPECIAL PROVISIONS FOR TEMPERATURE CONTROL”~~

Proposal 2

6. Amend sub-section 7.1.7.4.5 (a) and (b) to read (new wording underlined, deleted wording stricken through) as follows. Note that for 7.1.7.4.5 (c), (d), and (e) the amended text as given in this proposal was already adopted based on informal document INF.11, proposal 2, see ECE/TRANS/WP.15/251, paragraphs 27 and 28 and Annex I):

“7.1.7.4.5 Suitable methods for preventing the control temperature being exceeded are, in order of increasing control capability:

- (a) Vehicle, container or packaging (e.g. overpack) with tThermal insulation provided that the initial temperature of the substance(s) to be carried is sufficiently below the control temperature;
- (b) Vehicle, container or packaging (e.g. overpack) with tThermal insulation with coolant system provided that:
 - (i) An adequate quantity of non-flammable coolant (e.g. liquid nitrogen or solid carbon dioxide), allowing a reasonable margin for delay, is carried or a means of replenishment is assured;
 - (ii) Liquid oxygen or air is not used as coolant;
 - (iii) There is a uniform cooling effect even when most of the coolant has been consumed; and
 - (iv) The need to ventilate the transport unit before entering is clearly indicated by a warning on the door(s) of the transport unit;
- (c) Vehicle or container with tThermal insulation and single mechanical refrigeration provided that for substance(s) to be carried with a flash point lower than the sum of the emergency temperature plus 5 °C explosion-proof electrical fittings, EEx IIB T3 are used within the cooling compartment to prevent ignition of flammable vapours from the substances;

- (d) Vehicle or container with thermal insulation and combined mechanical refrigeration system with coolant system; provided that:
- (i) The two systems are independent of one another;
 - (ii) The provisions in (b) and (c) are complied with;
- (e) Vehicle or container with thermal insulation and dual mechanical refrigeration system; provided that:
- (i) Apart from the integral power supply unit, the two systems are independent of one another;
 - (ii) Each system alone is capable of maintaining adequate temperature control; and
 - (iii) For substance(s) to be carried with a flash point lower than the sum of the emergency temperature plus 5 °C explosion-proof electrical fittings, EEx IIB T3, are used within the cooling compartment to prevent ignition of flammable vapours from the substances.”

Proposal 3

7. Amend subsection 7.1.7.4.7 to read (new wording underlined, deleted wording stricken through);

“7.1.7.4.7 Insulated, refrigerated and mechanically-refrigerated containers intended for the carriage of temperature controlled substances shall conform to the following conditions:

- (a) The overall heat transfer coefficient of an insulated container shall be not more than 0.4 W/m²/K;
- (b) The refrigerant used shall not be flammable; and
- (c) Where containers are provided with vents or ventilation valves care shall be taken to ensure that refrigeration is not impaired by the vents or ventilation valves.

Where substances are required to be carried in insulated, refrigerated or mechanically-refrigerated vehicles ~~or containers~~, these vehicles ~~or containers~~ shall satisfy the requirements of Chapter 9.6.”

Justification

8. For the Model Regulations annexed to the twentieth revised edition of the Recommendations on the Transport of Dangerous Goods published by the United Nations (UN Model Regulations) new requirements were introduced in 7.1.5 for the carriage of substances that require temperature control. These requirements, that overlapped similar requirements in ADR, were included in the 2019 version of ADR in a new Section 7.1.7. Existing special provision V8 in Section 7.2.4 was deleted and an explanatory note was included instead.

9. In the discussion for inclusion in the ADR the Netherlands made remarks that “insulation” should be added to the measures given in the new Sub-section 7.1.7.4.5 which led to actions and amendment of the recommendations but also to further discussion on the difference between the carriage of insulated packages in non-insulated transport units and non-insulated packages in insulated transport units.

10. A long running discussion is on the applicability of Sub-section 9.6.1 in ADR of which some sections are very difficult to comply with for containers.

11. Rational behind proposal 1: With the introduction of the new Section 7.1.7 the title of Chapter 7.1 of ADR was amended as well. However, Section 7.1.1 to 7.1.6 deals with containers in general. By changing the title, the whole Chapter 7.1 applies to provisions for temperature control and no longer to containers in general. As this would have legal consequences a correction is suggested.

12. Rational behind proposal 2: To clarify the use of “insulation”, as already done by the adoption of document INF.11, proposal 2 for subsection 7.1.7.4.5 (c), (d) and (e), it is proposed to use the same text with the addition of insulated packaging for subsection 7.1.7.4.5 (a) and (b).

13. Rational behind proposal 3: Some requirements in Section 9.6.1 of ADR are applicable to vehicles as well as containers. As discussed in previous sessions of the Working Party, Section 9.6.1 should not be applicable to containers and it is proposed to bring the intention of the requirement of Section 9.6.1 (a), (d) and (e) into subsection 7.1.7.4.7 for containers. The subsection 7.1.7.4.7 is specific for ADR and do not interfere with the UN Model Regulations.
