

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

2 May 2024

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Item 4 (c) of the provisional agenda

Electric storage systems:

Transport provisions

Communication of surrounding conditions in accordance with packing instructions P911 and LP906

Transmitted by the expert from Belgium

I. Introduction

1. Special provision 376 in chapter 3.3 of the *Model Regulations on the Transport of Dangerous Goods* requires that “cells and batteries identified as damaged or defective and liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of carriage shall be packed and carried in accordance with packing instruction P911 of 4.1.4.1 or LP906 of 4.1.4.3”.

2. Paragraph (2) of those packing instructions require that the additional packaging performance requirements are verified according to a test specified by the competent authority. Criteria that can be used to assess the performance of the packages are listed in note ^a to both packing instructions. Point (f) of this note mentions “surrounding conditions in which the packaging may be used and carried (including possible consequences of gas or smoke emissions on the environment, such as ventilation or other methods) according to the gas management system of the packaging”.

3. As already referred to informal document INF.9¹ from the sixty-second session of the Sub-Committee, Belgium has come across packagings approved in accordance with packing instruction P911 for which the following conditions of use and carriage were imposed by the competent authority that approved the packaging:

- Free space around the packaging is required to protect the materials next to it from the external temperature of the packaging (100 °C).
- Packages must be placed in an easily accessible place.
- Carriage in a means of transport with sufficient ventilation to allow smoke and any toxic, flammable or asphyxiating components to escape.

Depending on the characteristics of the packaging, other conditions (e.g. stowage and segregations conditions or cooling requirements) may need to be applied also.

4. However, packing instructions P911 and LP906 do not stipulate or indicate how these surrounding conditions of use and carriage are to be communicated to the parties involved during transport. In Belgium’s view, there is a significant risk that the parties involved in the transport operation will not be aware of these conditions. As such, these packages may be transported in suboptimal conditions which increases the risk of a serious incident happening when the batteries contained go into thermal runaway.

5. To ensure that the parties involved in the transport operation are properly informed of the surrounding conditions in which the packaging is to be used and carried, Belgium

¹ https://unece.org/sites/default/files/2023-06/UN-SCETDG-62-INF09e_0.pdf.

proposed in informal document INF.8² at the Joint Meeting in September 2023 that the carriage of critically damaged lithium cells and batteries should require authorisation from the competent authorities involved in the transport operation, at least for carriage by rail and inland waterways. This way, the competent authority could ensure that all parties are made aware of the applicable surrounding conditions of use and carriage.

6. The Joint Meeting did not support this proposal but supported the idea to introduce a new special provision specifying that the consignor must inform the loader and the carrier of the surrounding conditions in which the packaging must be used and carried in accordance with packing instruction P911 or LP906 (see informal document INF.44³ from the RID/ADR/ADN Joint Meeting in September 2023).

7. At the RID/ADR/ADN Joint Meeting in March 2024, Belgium proposed in document ECE/TRANS/WP.15/AC.1/2024/27⁴ to introduce a new special provision assigned to UN Nos. 3090, 3091, 3480 and 3481. This new special provision required that the loader and carrier were informed by the consigner of the applicable surrounding conditions of the packaging in addition to contact details to provide technical assistance if necessary.

8. After discussion during that session, most delegates supported the addition of a new special provision assigned to UN Nos. 3090, 3091, 3480 and 3481 (see informal document INF.28)⁵:

“XXX When the packaging has been designed to be used and carried under the conditions referred to in (f) of packing instructions P911 and LP906, the consignor shall provide the loader and the carrier with the appropriate instructions.”

9. Nevertheless, packagings according to packing instructions P911 and LP906 can also be transported by sea and since application of suitable transport conditions is also important for maritime transport, it was suggested to bring forward a proposal to the Sub-Committee.

10. Since the Sub-Committee is the decisive body for the drafting of special provision 376, it is proposed to amend its current wording as it is already assigned to the entries for lithium batteries, instead of introducing a new special provision.

11. Additionally, during the drafting of this document, it was remarked that more specifications might be needed on how these conditions need to be communicated. Belgium believes that a copy of the usage instructions must accompany the transport. Therefore, this document also contains a proposal for such a requirement.

² https://unece.org/sites/default/files/2023-09/ECE-TRANS-WP15-AC1-2023-GE-inf-08e_0.pdf.

³ <https://unece.org/sites/default/files/2023-09/ECE-TRANS-WP15-AC1-2023-GE-inf-44.pdf>.

⁴ <https://unece.org/sites/default/files/2024-03/ECE-TRANS-WP15-AC1-2024-27E.pdf>.

⁵ <https://unece.org/sites/default/files/2024-03/ECE-TRANS-WP15-AC1-2024-BE-INF.28e.pdf>.

II. Proposals

Option 1

Proposal 1

12. In Chapter 3.3, amend the fifth paragraph of special provision 376 as follows (new text is underlined):

“Cells and batteries identified as damaged or defective and liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of carriage shall be packed and carried in accordance with packing instruction P911 of 4.1.4.1 or LP906 of 4.1.4.3, as applicable. When the packaging has been designed to be used and carried under the conditions referred to in (f) of packing instructions P911 and LP906, the consignor shall provide the loader and the carrier with the appropriate instructions. Alternative packing and/or carriage conditions may be authorized by the competent authority.”

Proposal 2

13. In Chapter 3.3, amend the last paragraph of special provision 376 as follows (new text is underlined):

“If applicable, a copy of the competent authority approval and the appropriate instructions for use shall accompany the transport.”

Option 2

Proposal 3

14. In Chapter 3.3, add a new sentence in the fifth paragraph of special provision 376 as follows (new text is underlined):

“Cells and batteries identified as damaged or defective and liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of carriage shall be packed and carried in accordance with packing instruction P911 of 4.1.4.1 or LP906 of 4.1.4.3, as applicable. When the packaging has been designed to be used and carried under the conditions referred to in (f) of packing instructions P911 and LP906, the consignor shall provide the loader and the carrier with the appropriate instructions. These instructions shall accompany the transport. Alternative packing and/or carriage conditions may be authorized by the competent authority.”

III. Sustainable Development Goals

15. This proposal contributes to Sustainable Development Goal 12: *Ensure sustainable consumption and production patterns* and more specifically its target 12.4 *to achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.*