

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

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Joint Meeting of the RID Committee of Experts and the
Working Party on the Transport of Dangerous Goods

Bern, 25-28 March 2024

Item 5 (b) of the provisional agenda:

Proposals for amendments to RID/ADR/ADN:

New proposals

Use of intermediate bulk containers (IBCs) for higher concentrations of UN 2672 ammonia solution – comments by Germany on informal document INF.11 (United Kingdom) and document ECE/TRANS/WP.15/AC.1/2023/18 (United Kingdom)

Transmitted by the Government of Germany

I. Introduction

1. At the RID/ADR/ADN Joint Meeting in March 2023, the United Kingdom proposed in document ECE/TRANS/WP.15/AC.1/2023/18¹ that a new special provision 67x be introduced that would make it possible to carry UN 2672 ammonia solution also at higher concentrations of up to 35 per cent in intermediate bulk containers (IBC) in accordance with packing instruction IBC03.
2. According to paragraph 33 of report ECE/TRANS/WP.15/AC.1/168², some delegates raised safety concerns and did not support the proposed amendments. The representative of the United Kingdom then withdrew the document.
3. In informal document INF.11³, the United Kingdom addresses some of these safety concerns.
4. Notwithstanding the explanatory notes in informal document INF.11, Germany still has safety concerns, as follows:
5. Proposed special provision 67x does not state whether metal IBCs have to be fitted with a pressure-relief device as required for metal IBCs in 6.5.5.1.7. Multilateral Agreement M345 addresses this aspect in no. 3: “By derogation from 6.5.5.1.7 regarding pressure relief requirements, metal IBC’s ... need not be fitted with vents during carriage.”. This raises three questions: One, it is unclear whether the codes of metal IBCs approved on the basis of Multilateral Agreement M345 without a pressure relief-device contain the letter W in accordance with 6.5.1.4.4, as a differing specification is approved by waiving the fitting of the pressure relief device. If this is the case, the fundamental question arises whether the use of the letter W should be permitted for safety-critical aspects such as, in this case, the requirement of a pressure-relief device. Finally, it would have to be clarified whether

¹ [ECE/TRANS/WP.15/AC.1/2023/18 \(unece.org\)](https://www.unece.org/transport/adr/adrwp15/2023/18.html)

² [ECE/TRANS/WP.15/AC.1/168.pdf \(unece.org\)](https://www.unece.org/transport/adr/adrwp15/168.html)

³ [INF.11 \(unece.org\)](https://www.unece.org/transport/adr/adrwp15/inf11.html)

6.5.5.1.7 must be applied when proposed special provision 67x is used or whether, in analogy to Multilateral Agreement M345, the fitting of the pressure relief device may be waived.

6. If metal IBCs fitted with a pressure relief device are approved in accordance with 6.5.5.1.7, highly-concentrated ammonia will be released during carriage; in this case, the pressure relief device will act as a venting device as from a gauge pressure of 65 kPa, and the dangerous good itself will be released. This is not permitted in accordance with 4.1.1.8 of RID/ADR.

7. The same applies to rigid plastics and composite IBCs, i.e. the use of venting devices is not permitted for these types of IBCs either.

8. However, if the fitting of a pressure-relief device is waived and no venting device is fitted for metal IBCs, or if rigid plastics and composite IBCs are not fitted with a venting device, this might result in the bursting of the IBCs. With regard to rigid plastics and composite IBCs, Germany assumes that none of the current standard IBC types would withstand an internal pressure (hydraulic) test at a test pressure of considerably more than 100 kPa; however, alternatively, 6.5.6.8.4.2 (b) (i) could be applied. With regard to metal IBCs, the question arises of whether the provision in 6.5.6.8.5 (b) in conjunction with 6.5.6.8.4.1 (c) can be fulfilled, which states that, up to a gauge pressure of 65 kPa, there must be no permanent deformation which renders the IBC unsafe for carriage. In the case of ammonia solution with a concentration of 35 per cent, the gauge pressure of 65 kPa is already reached at low temperatures of around 20 °C.

9. In addition to these safety concerns, Germany has reservations regarding necessary consequential amendments:

10. 4.1.1.10 contains a reference to the marking provisions in 6.5.2.2.1. As 6.5.2.2.1 does not require that metal IBCs be marked with the test pressure, the first paragraph of 4.1.1.10 is not applicable to metal IBCs. If the second paragraph of 4.1.1.10 is not considered, as is proposed in document ECE/TRANS/WP.15/AC.1/2023/18, 4.1.1.10 does not contain any provision on the maximum vapour pressure for the carriage of liquids in metal IBCs. Accordingly, if the proposal set out in document ECE/TRANS/WP.15/AC.1/2023/18 were adopted, the marking provisions in 6.5.2.2.1 would also have to be amended, i.e. the test pressure would also have to be indicated in the additional marks for metal IBCs.

11. With regard to the test pressure to be indicated, the marking provisions in 6.5.2.2.1 result from the testing requirements for the internal pressure (hydraulic) test in 6.5.6.8.4. For rigid plastics and composite IBCs, 6.5.6.8.4.2 (b) contains provisions for determining the test pressure that correspond with 4.1.1.10. For metal IBCs, 6.5.6.8.4.1 (b) stipulates that, as a rule, a test pressure of 200 kPa is to be applied to all metal IBCs for the carriage of liquids (31A, 31B, 31N). According to informal document INF.11, the test pressure for ammonia, depending on the concentration of the ammonia solution, would be up to 460 kPa. This would mean that, if the proposal set out in document ECE/TRANS/WP.15/AC.1/2023/18 were adopted, the test requirements in 6.5.6.8.4.1 (b) would also have to be amended.

12. Both consequential amendments would have to be discussed in the UN Sub-Committee of Experts on the Transport of Dangerous Goods.

13. For the reasons stated above in paragraphs 5 to 8 and 10 to 12, Germany is against introducing proposed special provision 67X.
