

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

Joint Meeting of the RID Committee of Experts and the

Working Party on the Transport of Dangerous Goods

Bern, 22–26 March 2010

Item 5 (b) of the provisional agenda

Proposals for amendments to RID/ADR/ADN: new proposals

Comments on doc. ECE/TRANS/WP.15/AC.1/2010/24 (United Kingdom)

Transport of ammonia solution in Intermediate Bulk Containers

Transmitted by the Government of Portugal

Introduction

1. As explained by United Kingdom in its summary “at the Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods in March 2009, the Government of Portugal raised the issue of the carriage of ammonia solution (UN 2672) in rigid and composite plastics IBCs”. Beside in informal document INF.36 presented to the September 2009 Joint Meeting we express our objections on proposals advanced by United Kingdom in its informal document INF.15.
2. The ideas of Portugal were synthesized in informal document INF. 34 and as we said, “we believe that above 20% of concentration the transport of ammonia solution does not respect 4.1.4.2 (packaging instructions concerning the use of IBC’s).
3. Now the United Kingdom proposes “to consider various options for new special packing provisions to transport UN 2672 ammonia solutions of concentrations between 20% and 35% in certain IBCs pending submission of a formal proposal for the next session”.
4. It is said in United Kingdom comments related to IBCs venting that “from assessments carried out in the United Kingdom, it has been concluded that the ammonia solution satisfies the requirement of 4.1.1.8”. It would be interesting to know in greater detail those assessments that were made in the United Kingdom. It seems to us that conclusions could greatly change for warmer countries.
5. About the proposals presented by United Kingdom we would like to make the following comments.

Comments

Proposal 1

6. United Kingdom states that “in the interests of multimodal harmonization”, it is useful to “add a special packing provision B11 to Packing Instruction IBC03 for inclusion in RID/ADR/ADN to cover concentrations of ammonia solutions up to and including 25%:

“**B11** Notwithstanding the provisions of 4.1.1.10, UN 2672 ammonia solution in concentrations not exceeding 25% may be carried in rigid or composite plastics IBCs (31H1, 31H2 and 31HZ1).”

7. Add “B11” in column (9a) against UN 2672 in Table A of Chapter 3.2”.

8. We ask if it would not be advisable to include the provision that whenever necessary the IBCs should be transported in sheeted vehicle bearing in mind that in countries like in the south of Europe, insulation can highly affect temperature and in consequence to affect pressure inside the IBC.

Proposal 2

9. “The United Kingdom would propose to the Working Party on the Transport of Dangerous Goods (WP.15) the following further texts for ADR to deal with the carriage by road of higher strength solutions, since this is current practice” (we ask in what countries this is a common practice?).

10. United Kingdom also proposes “if there is a consensus that carriage by rail or inland waterway should also be included, this text can be adapted at the Joint Meeting for inclusion in RID/ADR/ADN, and, a new special packing provision BBXX to IBC03 would read as follows:

“**BBXX** Notwithstanding the provisions of 4.1.1.10, UN 2672 ammonia solution in concentrations between 25% and up to 35% may be carried in rigid or composite plastics IBCs (31H1, 31H2 and 31HZ1) provided they are vented in accordance with 4.1.1.8.”.

11. Our comments: This is to extend the ideas of multilateral agreement M193 to ADR and for the reasons already exposed we do not agree. We believe that for higher concentrations there could be a problem especially in those countries where weather is warmer. We think that if certain countries for their climatic conditions (low temperatures) can afford themselves to transport ammonia solution at higher concentrations that shall continue to be done in the frame of multilateral agreements. We must realize that ADR/RID/ADN are intended for all contracting-parties, and in certain cases we should consider higher temperatures for transport operations.

12. In this proposal there is something new referring to the prescriptions for the use of IBCs in the transport of ammonia solution: IBCs must be vented, and reference appears to 4.1.1.8 from ADR. In fact this point of ADR refers that “where pressure may develop” the package may be fitted with a vent “provided the gas emitted will not cause danger on account of its toxicity, its flammability or the quantity released, for example”.

13. As to the venting let’s do a simple exercise: On a 40 feet maritime container, the internal volume is near 67.5 m³. The 8 minute exposition to ammonia AEGL-3 is 2700 ppm = 1888 mg/Nm³ (AEGL 3 it is the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death. The 8 minute period is the time of exposure to reach those toxic effects). If we admit that the container is closed, the release of 127.5 g in the air will be enough to reach this toxic level. This quantity is low and the release of relief valve could easily attain or surpass this value.

Proposal 3

14. United Kingdom proposes that if restricted to road transport, add a new special provision V to 7.2.4 as follows:

“V IBCs subject to special packing provision BBXX shall be carried in open or sheeted vehicles, vehicles with fabric sides or tops, or open or sheeted containers.”.

15. Add “V” in column (16) against UN 2672 in Table A of Chapter 3.2.

16. Our comment: The use of a open or sheeted vehicle could be unsafe if there is a release. By the other hand if the IBC’s are carried in an open vehicle the exposure to direct sunlight increases the chance of getting higher temperatures and could be also an unsafe mean of transportation.

Conclusions

17. Bearing in mind that:

- We believe the risks of toxicity and ignition should be assessed very carefully and as we explain in our former inf. doc. 34 we believe that in any case we should comply with pressure tests, which should be more strict for concentrations above 25%, since for 35% for example of ammonia concentration we can attain pressures of the order of 345 kPa at 50°C; and
- Ammonia is classified as toxic and a release of this substance could easily cause danger, causing health problems and by the other hand, “the flammable limits to free ammonia are from 16% to 25% by volume in air” (American National Standard Safety Requirements for the Storage and Handling of Anhydrous Ammonia, fifth Edition).

18. We have the following position:

In our opinion proposals 2 and 3 by UK in its doc. ECE/TRANS/WP.15/AC.1/2010/24 are not justifiable, in a general way, and we believe it is a matter for multilateral agreements. As to proposal 1 perhaps it should be reformulated having the provision that whenever necessary for protection of adverse climatic conditions it is advisable to use sheeted vehicles for transporting IBCs.