

**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

Berne/Geneva, 8 - 18 September 2009  
Item 7 of the provisional agenda

**Miscellaneous Proposals for Amendments to RID/ADR/ADN**

**Transport of Ammonia Solution in Intermediate Bulk Containers**

**Transmitted by the Government of the United Kingdom**

**SUMMARY**

***Executive  
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, which have been the subject of several Multilateral Agreements since the year 2000. Portugal declined to sign the UK's multilateral agreement permitting 'up to but not more than 35% ammonia solution' in certain IBCs because of concerns about excessive vapour pressure. Portugal sought a lower percentage. This paper proposes new text that permits the carriage of higher concentration ammonia solutions subject to additional safety measures.

***Action to be taken:***

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.

***Related documents:***

March 09/INF.34 (Portugal)

**Background and Justification**

1. In its paper INF.34 of March 2009, Portugal referred to ADR provision 4.1.4.2 in the section on IBC packing instructions concerning the use of IBCs and further informed the Joint Meeting that solutions of ammonia in excess of 20% do not comply with 4.1.4.2.

2. In 1999, Norway and Sweden jointly proposed to the UN Sub-Committee of Experts on the Transport of Dangerous Goods that the special nature of ammonia (i.e. a PGIII substance with a very high vapour pressure) should have special recognition to permit its carriage in IBCs. This was reflected in special packing provision B11 of Packing Instruction IBC 03 in the UN Model Regulations which states:

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

It should also be noted that this provision has been adopted by the IMO in the IMDG Code.

3. It was because the Joint Meeting did not agree to incorporate this special packing provision into RID/ADR at that time that first Sweden (in its Multilateral Agreement M98) and then the UK (in its Multilateral Agreement 138) took steps to permit such carriage between their countries and other Contracting Parties. The UK went further by proposing that the ammonia solution concentration permitted in IBCs could be increased to 35%. The UK chemical industry has been supplying concentrations of ammonia solutions in the range 20% to 35% in IBCs in domestic transport for over 30 years without any evidence of an incident. However, aware of the possible effect of higher temperatures in developing increased pressures, additional requirements apply to such carriage. The method used in the UK to ensure that, in the unlikely event that excessive pressures are generated, safety is not compromised is to utilise a “pressure relief” vent in the headspace of the IBC, to allow over pressure to be relieved to atmosphere. The transport of these IBCs is also then limited to open or curtain-sided vehicles.

4. ADR 4.1.1.8 allows packages, including IBCs, to be fitted with a vent where pressure may develop by the emission of gas from the contents. It also requires that the gas emitted will not cause danger on account of its toxicity, flammability or quantity released. From assessments carried out in the UK, it has been concluded that the ammonia solution satisfies the requirement of 4.1.1.8.

5. The application of such provisions in UK national transport is also permitted in the context of the EU Framework Directives on the safe transport of dangerous goods through recognition of regional climatic variations.

6. In order to address the anomaly pointed out by Portugal and to permit what the UK and others consider to be a perfectly safe transport operation, the UK now proposes a number of options, below, for the Joint Meeting to consider. Depending on the outcome of discussion, the UK will submit a formal proposal for adoption by the next session of the Joint Meeting.

## **Proposals**

### **Proposal 1:**

In the interests of multimodal harmonisation, 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).”

Add “B11” in Column (9a) against UN2672 in Table A of Chapter 3.2.

### **Proposal 2**

The United Kingdom would propose to WP.15 the following further texts for ADR to deal with the carriage by road of higher strength solutions, since this is current practice. 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.

Add a new special packing provision BBXX to IBC03 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”;

Add “BBXX” in column (9a) against UN 2672 in table 3.2A; and

### **Proposal 3**

If restricted to road transport, add a new special provision Vxx to 7.2.4 as follows: -

“**Vxx** 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”;  
and

Add “Vxx” in Column (16) against UN 2672 in table 3.2A

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