



**Economic and Social
Council**

Distr.
GENERAL

ECE/TRANS/WP.15/AC.2/2009/2
10 November 2008

Original: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Dangerous Goods

Joint Meeting of Experts on the Regulations annexed to the
European Agreement concerning the International Carriage
of Dangerous Goods by Inland Waterways (ADN)
(ADN Safety Committee)

Fourteenth session
Geneva, 26-30 January 2009
Item 4 of the provisional agenda

PROPOSALS FOR AMENDMENTS TO THE REGULATIONS ANNEXED TO ADN

Table C: UN 2672 AMMONIA SOLUTION

Transmitted by the Government of Germany^{1,2}

Introduction

1. In the implementation of the new provisions for the protection of the aquatic environment, an assessment of the substances listed in table C was carried out. The application of the new provisions resulted in changes for some of the substances including UN 2672 AMMONIA SOLUTION, relative density between 0.880 and 0.957 at 15° C in water, with more than 10 %

¹ Distributed in German by the Central Commission for the Navigation of the Rhine (CCNR) under the symbol CCNR/ZKR/ADN/WP.15/AC.2/2009/2.

² In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.7 (b)).

but not more than 35 % ammonia. Hitherto, this substance had been carried in a closed type-N vessel with an opening pressure of the high-velocity vent valve of 10 kPa. According to the new provisions, due to its aquatic environmental hazard N1 (Acute 1), a type-C vessel with 50 kPa is required for carriage. The question arose as to why the opening pressure of the high-velocity vent valve has been increased. This inquiry was the reason for carrying out calculations to verify vapour pressures of aqueous ammonia solutions in Germany (Federal Institute of Physics and Metrology, PTB). The following results were achieved:

2. For UN 2672 at a degree of filling of 95 %, the cargo tank internal pressures at a surface temperature of the liquid of 30°C and 37.8°C in the gaseous phase are:

For a 10 % solution	32.6 kPa
For a 20 % solution	47.9 kPa
For a 30 % solution	78.5 kPa
For a 35 % solution	118.5 kPa

The cargo tank internal pressures at 50°C and a degree of filling of 95 % are:

For a 10 % solution	58 kPa
For a 20 % solution	91.4 kPa

Conclusion

3. The analysis of the results of the calculations shows that ammonia solutions of more than 20 % but not more than 35 % ammonia have to be carried either in a C 1 1 pressure tank or with refrigeration C 2 2 1.

Proposal

4. It is recommended to divide the entry in table C, UN 2672 AMMONIA SOLUTION, relative density between 0.880 and 0.957 at 15°C in water, with more than 10 % but not more than 35 % of ammonia, into two entries:

(a) First entry:
UN 2672

AMMONIA SOLUTION, relative density between 0.880 and 0.957 at 15°C in water, with more than 10 % but not more than 35 % ammonia (more than 20 % but not more than 35 % ammonia).

Column 6	Column 7	Column 8	Column 9
C	2	2	1

(b) Second entry:
UN 2672

AMMONIA SOLUTION, relative density between 0.880 and 0.957 at 15°C in water, with more than 10 % but not more than 35% ammonia (not more than 20 % ammonia).

Column 6	Column 7	Column 8	Column 9
C	2	2	3
