

OTIF



ORGANISATION INTERGOUVERNEMENTALE POUR
LES TRANSPORTS INTERNATIONAUX FERROVIAIRES

ZWISCHENSTAATLICHE ORGANISATION FÜR DEN
INTERNATIONALEN EISENBAHNVERKEHR

INTERGOVERNMENTAL ORGANISATION FOR INTER-
NATIONAL CARRIAGE BY RAIL

INF. 6d)

16 November 2005

Original: English

RID: 42nd Session of the Committee of Experts on the Transport of Dangerous Goods
(Madrid, 21 – 25 November 2005)

Subject: Special provisions for ammonia rail tank-wagons

Proposal transmitted by CEFIC

Introduction

In May 2005 two incidents with ammonia rail tank-wagons happened at the site of DSM (a Dutch chemical company) while the tank-wagons were being pressurized; in both cases the discharge valve ruptured. In one case 5 kg of ammonia escaped.

An investigation showed the direct cause to be that both discharge valves were made of so-called bunt metal, a copper containing alloy.

Immediately after these incidents all ammonia tank-wagons were inspected; one other tank-wagon had the same bunt metal discharge valve.

In the "Guidance for transporting ammonia by rail", published in 2005 by EFMA (European Fertilizer Manufacturers Association), page 8 (section 2.3) it says:

"Ammonia is very corrosive to copper and copper containing alloys and therefore, equipment in contact with ammonia must be free of them".

On page 15 (section 3.3) it says:

"All the materials, including those of components which are in contact with the ammonia, shall be free from substances liable to react dangerously with it; to form dangerous compounds; **to degrade the material properties**; or to affect the quality of the ammonia. **In particular copper or copper containing materials must not be used.**"

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RID 6.8.2.1.9 states only in general terms:

"The materials of shells or of their protective linings which are in contact with the contents shall not contain substances liable to react dangerously with the contents, to form dangerous compounds, **or substantially weaken the material.**"

For ammonia tanks the following special provisions are in force: TU38, TE22, TM6 and TT8; none of these special provisions refer to the possible risks in case the tank or its accessories contain copper or copper-containing alloys.

Proposals

CEFIC proposes to include in the RID the following 2 items:

1. Amend RID 6.8.4 with a new special provision TC 8:

"**TC 8** For ammonia, tanks and accessories, which may come into contact with the product, may not contain copper or copper-containing alloys."

2. Add in Column (13) of Table A of Chapter 3.2 of RID for UN 1005 (Ammonia, anhydrous) the new special provision TC 8.

Remark by the Secretariat of OTIF: This question is also valid for ADR and should therefore be dealt with by the RID/ADR/ADN Joint Meeting.
