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Proposals for amendments to Annexes A and B of ADR: miscellaneous proposals

Amendment to special provision TC8 of ADR 6.8.4 for the carriage in tanks of UN 0331 Explosive, blasting, type B

Transmitted by the Government of Germany¹

Introduction

1. The working group on tanks of the Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods (RID/ADR/ADN Joint Meeting) met from 17 to 19 March 2014 in Bern on the basis of a mandate from the Joint Meeting. Informal documents INF.33 (Germany) was submitted to the plenary session and transferred to the working group on tanks for consideration.

2. The working group on tanks agreed in principle with the proposal since currently 6.8.2.1.7 allowed for a lower external design pressure for packing group II and III substances and the problem arose from the fact that explosives of UN No. 0331 did not have an assigned packing group. Germany was invited to submit a proposal to the next session of the Working Party as a solution for ADR 2015 was preferable and it concerned only ADR tanks.

¹ The present document is submitted in accordance with paragraph 1(c) of the terms of reference of the Working Party, as contained in document ECE/TRANS/WP.15/190/Add.1, which provides a mandate to “develop and update the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)”.

Proposal

3. The German delegation now wants to provide a new proposal to the issues raised concerning the complement to special provision TC8 of 6.8.4 of ADR for the carriage in tanks of UN No. 0331 Explosive, blasting, type B.

4. It is requested to amend special provision TC8 in section 6.8.4 (a) of ADR as follows:

Add the following sentence at the end:

“The tanks may be designed for an external design pressure of not less than 5 kPa (0.05 bar).”.

Justification

5. With regard to the justification for this, reference is made to informal document INF.33 submitted at the spring 2014 session of the RID/ADR/ADN Joint Meeting and to the report of the working group on tanks of the Joint Meeting (ECE/TRANS/WP.15/AC.1/134/Add.1, item 13). The contents of informal document INF.33 is reproduced in annex.

Annex

Justification for the proposal to amend TC8 (informal document INF.33 of the RID/ADR/ADN Joint Meeting)

Background

1. This document concerns ANFO explosives, e.g. as a mixture of prilled technical ammonium nitrate and oil, designated as UN 0331 EXPLOSIVE, BLASTING, TYPE B, classified as 1-1.5D. It is necessary for the operation of mines.
2. The carriage of explosive substances tested for their suitability has been allowed in portable tanks in accordance with chapter 6.7 of RID/ADR since 2005 and in ADR tanks in accordance with chapter 6.8 since 2013.
3. In accordance with the technical state of the art, as little confinement as possible is to be chosen when handling the mentioned explosive substances. This increases safety, as the risk of an explosive effect is reduced. Against this background, the code "T1" has been established for portable tanks and the code "S2.65AN" for ADR tanks without application of the hierarchy of tanks. These tanks have low test and/or working pressures and are manufactured with the minimum wall thicknesses required.
4. Tanks for the carriage of dangerous goods must be protected against the risk of deformation as a result of a negative internal pressure in accordance with 6.7.2.2.10 and 6.8.2.1.7 of RID/ADR. Tanks equipped with vacuum valves must be designed to withstand an external pressure of at least 21 kPa (0.21 bar). In accordance with the above paragraphs, facilitations are only possible for solid substances (powdery or granular) of packing groups II and III. In such cases, an external design pressure of not less than 5 kPa (0.05 bar) is permissible.
5. Explosive substances of type B (e.g. UN 0331) and all other explosive substances are not assigned to packing groups. This means that the tanks for UN 0331 must be designed to withstand an external pressure of not less than 0.21 bar. A facilitation as regards the external design pressure for solid substances in accordance with 6.7.2.2.10 and 6.8.2.1.7 is thus not possible, even if all other conditions for a facilitation are satisfied.
6. In contrast to designing a tank for an external pressure of 5 kPa (0.05 bar), designing a tank for an external pressure of 21 kPa (0.21 bar) requires either greater tank wall thicknesses or the use of several vacuum rings. This results in an unwanted greater confinement of the explosive substance.

Proposal

7. It is requested to amend special provision TC8 in section 6.8.4 (a) of ADR as follows:

Add the following sentence at the end:

“The tanks may be designed for an external design pressure of not less than 5 kPa (0.05 bar).”

Justification

8. The amendment of the provisions applied for increases the safety of the carriage of UN 0331 in tanks, as increased wall thicknesses or reinforcement by rings are avoided by reducing the external design pressure. Further confinement of the explosive substance is avoided. The other requirements as regards minimum wall thicknesses remain unaffected.

9. For ADR 2013, special provision TC8 was introduced. This special provision (so far) only applies to EXPLOSIVE, BLASTING, TYPE B (UN 0331) Special provision TA5 establishes the code of the ADR tank and that the tank hierarchy is not applicable. Both indications are aimed at guaranteeing the least possible confinement of the substance. The amendment proposed here pursues the same goal.

10. The existing special provision TP32 for UN tanks is specifically intended for UN 0331 and similar substances and accordingly formulates the low level of confinement of the substances as a protection target. The solid substance UN 3375 - as an intermediate product of the production of explosive products - that may also be carried under TP32 is assigned to packing group II and the facilitation sought here for UN 0331 can already be used.

11. As regards the use of packagings for goods of Class 1, 4.1.1.18 sets out the general rule that these packagings must comply with the provisions for the medium danger group - unless specific provision to the contrary is made in ADR. The transfer of a used rule for packing group II with regard to explosive substances is not fundamentally contradictory to the considerations of ADR.

12. If the Joint Meeting can agree to the safety-related approach formulated here, it would be possible to also submit a corresponding proposal for UN tanks for chapter 6.7.
