



# Economic and Social Council

Distr.: General  
6 January 2020

Original: English

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## 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, 16–20 March 2020

Item 5 (a) of the provisional agenda

**Proposals for amendments to RID/ADR/ADN  
pending issues**

## Carriage of FERTILIZER AMMONIATING SOLUTION (UN 1043)

Transmitted by the Government of Spain\*,\*\*

### *Summary*

<b>Executive summary:</b>	The purpose of this document is to clarify the provisions for the carriage of UN 1043.
<b>Action to be taken:</b>	Modify 2.2.2.2.2 of RID/ADR/ADN.
<b>Related documents:</b>	Informal document INF.10 (September 2019 session).

## Background information

1. According to table A of Chapter 3.2 carriage of UN 1043 FERTILIZER AMMONIATING SOLUTION with free ammonia is regulated only through SP 642, as columns 7-20<sup>1</sup> are empty. Special provision 642 is assigned only to this UN number, and reads as follows:

“Except as authorized under 1.1.4.2, this entry of the UN Model Regulations shall not be used for the carriage of fertilizer ammoniating solutions with free ammonia.”

2. Paragraph 1.1.4.2 allows carriage in a transport chain including maritime or air carriage according to the conditions stipulated for the maritime or air leg of the carriage.

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\* 2020 (A/74/6 (Sect.20) and Supplementary, Subprogramme 2).

\*\* Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2020/36.

<sup>1</sup> Column 15 includes “-” as transport category. For ADR only, also (E) as tunnel category.

3. The Model Regulations include for UN 1043 120 ml as LQ, E0 as EQ and P200 as packing instruction. IMDG Code includes additionally SW2 for manipulation, and the TTH allow its transport in cargo airplanes using P200 with a 150 kg limit.

4. This means, that UN 1043, when in a transport chain including maritime or air transport, can be transported by rail or road using P200 or the LQ or EQ regulation.

5. Nevertheless, UN 1043 contains (ADR only) a classification code 4A in (3b), indicating that it is a dissolved gas with asphyxiating properties. According to 2.2.2.2.2, dissolved gases which cannot be classified under UN numbers 1001, 2073 or 3318 shall not be accepted for transport. Therefore, UN 1043 could not be transported.

6. In RID/ADR, UN 1043 is allowed to be transported only in connection with a maritime or air transport. For pure land transport as such, UN 1043 is not allowed to be used and instead these other UN numbers are used:

- 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, Class 8, code 5C, PG III;
- UN 2073 AMMONIA SOLUTION, relative density less than 0.880 at 15 °C in water, with more than 35% but not more than 50% ammonia, Class 2 code 4A; and
- UN 3318 AMMONIA SOLUTION, relative density less than 0.880 at 15 °C in water, with more than 50% ammonia, Class 2 code 4TC.

7. The main difference between UN 1043 and the other three is that the latter have specific ammonia concentrations ranges while the specification for UN 1043 is the existence of “free ammonia”. Ammonia solutions with not more than 10% ammonia are not subject to the requirements of RID/ADR (as detailed in SP 543, applicable to UN 2676, 2073 and 3318).

8. In informal document INF.10 presented by Spain at the September 2019 session, three different possibilities for the transport of fertilizer ammoniating solution were presented:

a) Allowing transport under ADR/RID only when part of a transport chain including maritime or air carriage, either by:

- Modifying 2.2.2.2.2 to specify that dissolved gases which cannot be classified under UN numbers 1001, 2073 or 3318 shall not be accepted for transport, except as indicated under SP 642.
- Eliminating the classification code 4A for ADR from column (3b), creating the same situation as currently in RID. Nevertheless, even without the classification code 4A assigned, UN 1043 would still remain a dissolved gas, and 2.2.2.2.2 would still be applicable.

b) Not allowing any transport under ADR/RID, by eliminating SP 642 and including in columns (4)-(20) “TRANSPORT PROHIBITED”.

c) Allowing the carriage of UN 1043 under the same conditions than in the Model Regulations, including 120 ml as LQ, E0 as EQ and P200 as packing instruction.

9. After the discussion at the Joint Meeting, Spain was invited to prepare a new document clarifying the provisions in 2.2.2.2.2, following the first of the options presented.

## Analysis

10. Provision 2.2.2.2.2, fifth indent, indicates the dissolved gases that are allowed to be carried in RID/ADR. UN 1043 should appear there, together with the cross reference to SP 642, to ensure this UN number is only used in the cases specified in 1.1.4.2. This proposal is included in paragraph 14 below.

11. According to the information available, for transport of ammonia solution in land transport, UN 2672, 2072 and 3318 should be used instead of UN 1043. Perhaps it would be

interesting to include a reference to these UN numbers into SP 642, as this would permit an easier application of the correct UN number. This proposal is included in paragraph 15 below.

12. The classification code in column (3b), is only necessary for classification purposes according to RID/ADR. According to special provision 642 in RID/ADR UN 1043 may only be carried after a previous sea or air transport, so that classification should be carried out in accordance with the IMDG Code or the TTI, which do not provide for a classification code, and therefore it could be justified to not include a classification code. Nevertheless, the classification code only gives objective information on the substance, and no indication on the conditions in transport, and including it could be positive. Both options, including or not a classification code, would be reasonable, but it would seem logical to decide for the same option both in RID and ADR. Two alternative proposals are included in paragraph 16 below.

## Carriage of UN 1043 on inland waterways

13. For UN 1043 in ADN, SP 642 is not allocated. To ensure UN 1043 is only used in conjunction with a maritime or air transport, also SP 642 should be included for UN 1043 in ADN and the text of SP 642 should be included into the SP list in Chapter 3.3. This proposal is included under paragraph 17 below.

## Proposals

14. Spain suggests to modify 2.2.2.2.2 of the RID/ADR/ADN (new text underlined):

“The following substances and mixtures shall not be accepted for carriage:

- UN No. 2186 HYDROGEN CHLORIDE, REFRIGERATED LIQUID;
- UN No. 2421 NITROGEN TRIOXIDE;
- UN No. 2455 METHYL NITRITE;
- Refrigerated liquefied gases which cannot be assigned to classification codes 3A, 3O or 3F (only for the ADN: with the exception of substance identification number 9000 AMMONIA ANHYDROUS, DEEPLY REFRIGERATED of classification code 3TC in tank vessels);
- Dissolved gases which cannot be classified under UN Nos. 1001, 1043, 2073 or 3318. For UN 1043 see special provision 642;
- ....”

15. Spain also suggests to modify SP by including an additional sentence, that would include a cross reference to the other UN numbers used for ammonia (new text underlined):

“Except as authorized under 1.1.4.2, this entry of the UN Model Regulations shall not be used for the carriage of fertilizer ammoniating solutions with free ammonia. Otherwise, for carriage of ammonia solution, see UN 2073, 2672 and 3318.”

16. Spain proposes to align the use of the classification code in column (3b) both in RID and ADR, by choosing one of the following alternative proposals:

For RID only, include “4A” into column (3b) for UN 1043 in Table A of Chapter 3.2.

For ADR only, delete “4A” from column (3b) for UN 1043 in Table A of Chapter 3.2.

Spain favours the first of these options.

17. Additionally, for ADN only, SP 642 has to be included into column (6) of table A of Chapter 3.2 for UN 1043, and the text for SP 642 has to be included into Chapter 3.3.