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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, 15-19 March 2021

Item 5 (a) of the provisional agenda

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

#### **Name and description for UN numbers in Model Regulations and RID/ADR: UN 2426 Ammonium nitrate**

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

*Summary*

**Executive summary:** Eliminate the differences in the name and description of UN 2426 AMMONIUM NITRATE.

**Action to be taken:** Harmonise the name and description with the UN number used in the Model Regulations.

## Introduction

1. In some cases the name and description of UN numbers are used differently in the Model Regulations and RID/ADR. In September 2019 Spain presented ECE/TRANS/WP.15/AC.1/2019/32 as a discussion document in which the differences were shown and analysed for some UN numbers.

2. Different delegations gave their comments on the background of the existing differences, and Spain was invited to develop a proposal to ensure harmonization for consideration at the Joint Meeting or the Sub-Committee, as appropriate.

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\* A/75/6 (Sect.20), para 20.51.

\*\* Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2021/13.

\*\*\* This document was scheduled for publication after the standard publication date owing to circumstances beyond the submitter's control.

3. Having the same name and description for one UN number in all modes by harmonizing the Model Regulations and other transport modes would enable a more rational approach and ease administrative burdens during transport.

## Background

4. Name and description of UN 2426, AMMONIUM NITRATE, in the Model Regulations and in RID/ADR are the following:

UN Number	Model Regulations	RID/ADR
2426	AMMONIUM NITRATE, LIQUID (hot concentrated solution)	AMMONIUM NITRATE, LIQUID, hot concentrated solution, in a concentration of more than 80% but not more than 93%

5. The name in RID/ADR includes restrictions on the contents of ammonium nitrate, while such limits are omitted in the Model Regulations.

6. SP 252 is assigned to UN 2426 in both the Model Regulations and in RID/ADR, with the following text:

“Provided the ammonium nitrate remains in solution under all conditions of carriage, aqueous solutions of ammonium nitrate, with not more than 0.2% combustible material, in a concentration not exceeding 80%, are not subject to the requirements of ADR.”

7. Additionally, in RID/ADR, SP 644 is assigned to UN 2426 (and only to UN 2426) and indicates:

“This substance is admitted for carriage, provided that:

1. The pH is between 5 and 7 measured in aqueous solution of 10% of the substance carried;

2. The solution does not contain more than 0.2% combustible material or chlorine compounds in quantities such that the chlorine level exceeds 0.02%.”

8. As it was pointed out during the discussion of ECE/TRANS/WP.15/AC.1/2019/32, special provision SP 252 explains the lower threshold included in the description of UN 2426.

9. The explanation for the upper threshold is related to the transport conditions of UN 2426 according to the International Maritime Dangerous Goods (IMDG) Code.

## Transport of AMMONIUM NITRATE, LIQUID (hot concentrated solution) according to other modal regulations

### Transport of UN 2426 according to the IMDG Code

10. Transport of UN 2426 in the IMDG code is subject to the following conditions, as explained in column (17) of properties and observations:

“Hot aqueous solution of not more than 93% ammonium nitrate with not more than 0.2% combustible material (including organic material calculated as carbon) and free from any other added matter, containing at least 7% water, while the maximum content of chloride ions should not exceed 0.02%. May cause fire and explosion in contact with combustible material (e.g. wood, straw, cotton, oil, sugar, etc.), strong acids, and other class 5.1 substances and burn fiercely. Maximum allowable transport temperature of the solution 140°C. This temperature should be indicated on the transport unit. The acidity (pH) of the cargo when diluted with ten parts of water to one part of cargo, by mass, should be between 5.0 and 7.0. The concentration and temperature of the solution at the time of loading, its percentage of combustible materials and of chlorides, and the contents of free acid should be certified.”

11. In addition to SP 252 (see text in paragraph 6), SP 942 (sea mode only) applies:

“SP 942: The concentration and temperature of the solution at the time of loading, its percentage of combustible material and of chlorides as well as the contents of free acid shall be certified.”

### **Transport of UN 2426 according to the ICAO Technical Instructions**

12. Transport of UN 2426 in the ICAO Technical Instructions tests is forbidden, both for passenger and cargo planes, with the addition of Special Provision A129 to this number, which is equivalent to special provision 252 of the Model Regulations and RID/ADR.

## **Analysis**

13. During the discussion of document ECE/TRANS/WP.15/AC.1/2020/41 submitted by Spain, some delegations made interesting comments on this proposal:

- The 140 °C limit already appears in special provision TU29 associated with this UN number in RID/ADR (column 13) for tanks.
- The entry in column (17) of IMDG is not mandatory, but if included in a special provision it would become mandatory for RID/ADR.
- There is a need for clarification of the meaning and intention of the certification process as requested in the last part of the proposal. In particular how that certification would be done and who would do it. And also, if the proposal was accepted, the French version of the document should be corrected.

14. Based on the comments received, Spain continued working and developing the proposal, with the objective of harmonizing with the name of the Model Regulations, and analyzing the need to include, or not, other requirements.

15. The upper limit for the concentration of ammonium nitrate seems to be directly related to the properties and observations included in column (17) in the IMDG Code for this product.

16. Nevertheless, the indications in the IMDG Code are not limited to set only a maximum value for the concentration of ammonium nitrate, but additionally:

- (a) give indications on other substances (combustible material, water, content of chloride ions);
- (b) limit the temperature for transport to 140 °C;
- (c) require the certification of the temperature at the time of loading, including the contents of chlorides and free acid;
- (d) indicate possible dangers;
- (e) require the indication of the temperature on the transport unit.

17. Analyzing one by one of these points, they have a different treatment in RID/ADR:

- (a) The indications on combustible material and chlorine ions are contained in SP 644 for RID/ADR. The indication of a 7% of water fixed in the IMDG Code is not taken over into RID/ADR; but as the maximum concentration of the solution is fixed at 93%, the other 7% must be water. Introducing a 7% minimum limit for the water content therefore would not change the provisions, only simplify the application for the reader.
- (b) In RID/ADR, UN 2426 is affected by Special Provision TU29, but only for RID/ADR Tanks (not for portable tanks and bulk containers). This special provision reads as follows:

“Tanks shall be filled to not more than 97% of their capacity and the maximum temperature after filling shall not exceed 140 °C”

So, for the case of tanks, the limit of 140 °C is already included for RID/ADR. Nevertheless, it may be prudent to include the same limit also for other cases.

(c) The certification requested in the IMDG Code has not been taken over into RID/ADR for the time being. In the IMDG Code, these certifications shall be provided by the consignor. In the discussions it was considered that only for longer journeys (sea transport) a certificate would be interesting, but not for shorter journeys like in inland transport. Additionally, the need for this certificate is under discussion also for the IMDG Code, so it seems not appropriate to include it into RID/ADR.

(d) and (e) The last two points don't seem to be that relevant for RID/ADR as for the IMDG Code, as there is an easier access to the transported goods in this case.

18. Based on the previous analysis and to harmonize in addition the name and description of this UN Number with the one used in the Model Regulations and IMDG Code, Spain suggests to introduce further changes into SP 644, to take over some of the provisions from the IMDG Code.

## Proposals

19. Spain suggests modifying the name and description of UN 2426 to harmonise with the one used in the Model Regulations and in the IMDG Code. The part of the indications that were introduced into the RID/ADR description should be introduced into SP 644. In addition, further criteria from the IMDG Code may be introduced into SP 644. SP 252 remains unchanged.

20. Deleted text is marked as ~~stricken through~~, new text underlined.

21. In Tables A and B, amend UN 2426 to read:

UN 2426 AMMONIUM NITRATE, LIQUID, ~~(hot concentrated solution), in a concentration of more than 80% but not more than 93%~~

22. Amend SP 644 to read:

SP 644:

"This substance is admitted for carriage, provided that:

- The pH is between 5 and 7 measured in aqueous solution of 10% of the substance carried;
- The solution does not contain more than 93% ammonium nitrate. The solution shall contain at least 7% of water;
- The solution does not contain more than 0.2% combustible material or chlorine compounds in quantities such that the chlorine level exceeds 0.02%; and
- The maximum allowable transport temperature of the solution shall be 140 °C."