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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

Geneva, 17–27 September 2019

Item 4 of the provisional agenda

##### Harmonisation with the UN Recommendations on the Transport of Dangerous Goods

### Chapter 3.3 – New special provisions 393 and 394: Chemical stability of nitrocellulose

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

#### Introduction

1. In the context of harmonisation with the 21<sup>st</sup> edition of the UN Recommendations on the Transport of Dangerous Goods, new special provisions 393 and 394 will be carried over into RID/ADR/ADN.
2. According to these special provisions, nitrocellulose of Class 1 (special provision 393) and of Class 4.1 (special provision 394) must meet the criteria of the Bergmann-Junk test or methyl violet paper test in the UN Manual of Tests and Criteria Appendix 10. This creates a mandatory requirement for a chemical stability test.
3. In consequence RID/ADR/ADN 2.3.2 needs to be amended. The method for testing chemical stability according to RID/ADR/ADN is not prescribed on a mandatory basis; in practice, the Bergmann-Junk test is already used as a rule. The test of chemical stability under heat according to 2.3.2.9 should therefore be deleted.
4. However, the method for determining the ignition temperature should be maintained. For safety reasons, it is advisable to determine the ignition temperature of the material before carrying out the Bergmann-Junk test or the methyl violet paper test. It can only be ensured that decomposition does not occur during the Bergmann-Junk test or the methyl violet paper test if the ignition temperature is higher than 180°C, or 170°C for plasticized nitrocellulose. Both test methods assume a temperature increase to 132°C or 134.5°C; decomposition can

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\* In accordance with the programme of work of the Inland Transport Committee for 2018-2019, (ECE/TRANS/2018/21/Add.1, Cluster 9, (9.2)).

\*\* Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2019/28.

destroy the testing apparatus and endanger laboratory technicians. This is the case for tests on nitrocellulose of both Class 1 and Class 4.1.

5. This requires further amendments in the current 2.3.2.1 to 2.3.2.8.

## Proposals

6. In 2.3.2:

In the heading, amend "Class 4.1" to read "Class 1 and Class 4.1".

7. Delete current 2.3.2.1 and 2.3.2.2 and replace them with the following text:

"2.3.2.1 In order to determine the criteria of the nitrocellulose, the Bergmann-Junk test or the methyl violet paper test in the Manual of Tests and Criteria Appendix 10 shall be performed (see Chapter 3.3, special provisions 393 and 394). If there is doubt that the ignition temperature of the nitrocellulose is considerably higher than 132°C in the case of the Bergmann-Junk test or higher than 134.5°C in the case of the methyl violet paper test, the ignition temperature test described in 2.3.2.5 should be carried out before these tests are performed. If the ignition temperature of nitrocellulose mixtures is higher than 180°C or the ignition temperature of plasticized nitrocellulose is higher than 170°C, the Bergmann-Junk test or the methyl violet paper test can be carried out safely."

8. Delete current 2.3.2.3 to 2.3.2.5.

9. 2.3.2.6 becomes 2.3.2.2.

In the text, amend "2.3.2.9 and 2.3.2.10" to read "2.3.2.5".

10. 2.3.2.7 becomes 2.3.2.3.

Amend "Before being dried as prescribed in 2.3.2.6 above, substances conforming to 2.3.2.2 shall" to read:

"Before being dried as prescribed in 2.3.2.2 above, plasticized nitrocellulose shall". (Amendments are underlined).

11. 2.3.2.8 becomes 2.3.2.4.

Amend "Weakly nitrated nitrocellulose conforming to 2.3.2.1 shall first undergo preliminary drying as prescribed in 2.3.2.7 above;" to read:

"Weakly nitrated nitrocellulose shall first undergo preliminary drying as prescribed in 2.3.2.3 above". (Amendments are underlined).

12. Delete 2.3.2.9.

13. 2.3.2.10 becomes 2.3.2.5.
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