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## Economic Commission for Europe

### Inland Transport Committee

#### Working Party on the Transport of Dangerous Goods

**Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (ADN Safety Committee)**

#### Thirty-eighth session

Geneva, 23–27 August 2021

Item 4 (b) of the provisional agenda

**Proposals for amendments to the regulations annexed to the ADN:  
other proposals**

### 3.2.3.3 Scheme B

**Submitted by the Government of the Netherlands\*.\*\***

<b>Executive summary:</b>	To align Scheme B with the amended Schemes A and C it is proposed to amend Scheme B to improve the legibility.
<b>Action to be taken:</b>	The ADN Safety Committee is requested in paragraph 13 to adopt the proposed amendments
<b>Related documents:</b>	Informal document INF.10 of the thirty-fourth session ECE/TRANS/WP.15/AC.2/70 (paragraphs 55-56) Informal document INF.7 of the thirty-fifth session ECE/TRANS/WP.15/AC.2/72 (paragraphs 68-70)

### Introduction

1. During the thirty-fourth session of the ADN Safety Committee the Dutch delegation proposed to amend 3.2.3.3 Scheme A, to improve the readability (read the scheme left-to-right), user friendliness and to reduce the possibility to apply the scheme in a wrong way. The ADN Safety Committee requested the informal working group on substances to improve Schemes A, B, and C of 3.2.3.3.

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\*\* In accordance with the programme of work of the Inland Transport Committee for 2021 as outlined in proposed programme budget for 2021 (A/75/6 (Sect.20) para 20.51).



2. The informal working group on substances presented proposals to amend Scheme A, B and C to improve the legibility during the thirty-fifth session. The proposals for the improved Schemes A and C were adopted by the Committee, however the proposal for scheme B was differed to a further session to allow delegations to incorporate substantive improvements on scheme B on top of the editorial improvements proposed by the informal working group.
3. The process of formulating substantive improvements for Scheme B has proven to be challenging. No substantive improvements for Scheme B were proposed yet. As a result, Scheme A and C were amended to be read left-to-right, while Scheme B remained unamended, still to be read right-to-left.
4. Since it is not known to the Dutch delegation that any substantive improvements to Scheme B are close to being finished, and to avoid a situation where Scheme B remains unamended for the next version of ADN, the Dutch delegation proposes to adopt the amendments proposed below to improve the legibility of Scheme B, independently from the substantive proposals that may or may not be proposed during this biennium.

## Clarification on the proposed amendments

5. To align Scheme B with Schemes A and C, the Dutch delegation proposes to include a header above of Scheme B to clarify the application of the Scheme. Since multiple columns could be relevant for certain substances, a sentence to clarify that the most stringent resulting cargo tank equipment should be used is added.
6. To improve the legibility and to align Scheme B with Schemes A and C, we propose to move the left most column to the right.
7. Since the rationale is that the arising requirements should all be mentioned in the last column, two additional rows are proposed. The first is to differentiate between the “Pressure relief valve/high velocity vent valve opening pressure: 50 kPa, **with** refrigeration”; and the “Pressure relief valve/high velocity vent valve opening pressure: 50 kPa, **without** refrigeration”. The second is to differentiate between the “Pressure relief valve/high velocity vent valve opening pressure: 10 kPa, **with** water spraying” and the “Pressure relief valve/high velocity vent valve opening pressure: 10 kPa, **without** water spraying”.
8. The overlap of  $P_{d50}$  values for class 3 between the third and fourth column of the current Scheme B leads to unnecessary confusion. Therefore, it is proposed to introduce separate columns for  $P_{d50}$  values between 150 and 175 kPa and for  $P_{d50}$  values between 110 and 150 kPa. For the  $P_{d50}$  values between 110 and 150 kPa consignors could choose between vessels equipped with “Pressure relief valve/high velocity vent valve opening pressure: 50 kPa (without water spraying)”, or “Pressure relief valve/high velocity vent valve opening pressure: 10 kPa (with water spraying)”. Note that the resulting cargo tank equipment is the same for all  $P_{d50}$  values as in the current Scheme B.
9. Currently the cell for CMR<sup>1</sup> substances contains a conditional water spraying when the vapour pressure according to the calculation is higher than 10 kPa. Since a differentiation between the rows for 10 kPa with and without water spraying is proposed, a second cell is consequently proposed for CMR substances with a vapour pressure lower or equal 10 kPa.
10. Overall, these proposals combined lead to a better readable, and applicable Scheme B. It can be read left-to-right, just like Scheme A and C.

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<sup>1</sup> CMR is used to indicate substances with long-term effects on health (*carcinogenic, mutagenic or toxic to reproduction*, Categories 1A and 1B in accordance with the criteria of Chapters 3.5, 3.6 and 3.7 of the GHS).

## **Proposed amendment**

11. The Dutch delegation proposes the following amendment to 3.2.3.3, Scheme B of ADN. Proposed amendments are bold and underlined, deleted text is stricken through:

## Scheme B: Criteria for equipment of vessels of type N with closed cargo tanks

**Ascertain which substance/cargo tank characteristics in the first six columns are relevant. Select the applicable row in the relevant column. The cargo tank equipment requirements for N-vessels with closed cargo tanks are then described in this row in the seventh column. If multiple columns are relevant select the topmost relevant row in the seventh column.**

Cargo tank equipment	Substance/cargo tank characteristics					Requirements arising	
	Class 3, flash-point < 23°C			Corrosive substances	CMR substances	Cargo tank equipment	
Pressure tank (400 kPa)	175 kPa ≤ P <sub>d 50</sub> < 300 kPa without refrigeration					<b><u>Pressure tank (400 kPa)</u></b>	
Pressure relief valve/high velocity vent valve opening pressure: 50 kPa	175 kPa ≤ P <sub>d 50</sub> < 300 kPa, with refrigeration (No. 1 in column (9))	110 kPa ≤ P <sub>d 50</sub> < 175 kPa without water spraying				<b><u>Pressure relief valve/high velocity vent valve opening pressure: 50 kPa (with refrigeration (No. 1 in column (9)))</u></b>	
		<b><u>150 kPa ≤ P<sub>d 50</sub> &lt; 175 kPa</u></b>	<b><u>110 kPa ≤ P<sub>d 50</sub> &lt; 150 kPa without water spraying</u></b>			<b><u>Pressure relief valve/high velocity vent valve opening pressure: 50 kPa</u></b>	
Pressure relief valve/high velocity vent valve opening pressure: 10 kPa			110 kPa ≤ P <sub>d 50</sub> < 150 kPa with water spraying (No. 3 in column (9))	P <sub>d 50</sub> < 110 kPa	Packing group I or II with P <sub>d 50</sub> > 12.5 kPa or reacting dangerously with water or with gases in solution	Pressure relief valve/high velocity vent valve opening pressure: 10 kPa; with water spraying when $v_2 \leq$ Vapour pressure > 10 kPa (calculation of the vapour pressure according to the formula for column 10, except that $v_a = 0.03$ )	<b><u>Pressure relief valve/high velocity vent valve opening pressure: 10 kPa (with water spraying (No. 3 in column (9)))</u></b>
				<b><u>P<sub>d 50</sub> &lt; 110 kPa</u></b>	<b><u>Packing group I or II with P<sub>d 50</sub> &gt; 12.5 kPa or reacting dangerously with water or with gases in solution</u></b>	Pressure relief valve/high velocity vent valve opening pressure: 10 kPa; with water spraying when $v_2 \leq$ Vapour pressure ≤ 10 kPa (calculation of the vapour pressure according to the formula for column 10, except that $v_a = 0.03$ )	<b><u>Pressure relief valve/high velocity vent valve opening pressure: 10 kPa</u></b>

12. For clarity, the proposed Scheme B, without amendment-mark-up is shown below:

**Scheme B: Criteria for equipment of vessels of type N with closed cargo tanks**

Ascertain which substance/cargo tank characteristics in the first six columns are relevant. Select the applicable row in the relevant column. The cargo tank equipment requirements for N-vessels with closed cargo tanks are then described in this row in the seventh column. If multiple columns are relevant select the topmost relevant row in the seventh column.

Substance/cargo tank characteristics						Requirements arising
Class 3, flash-point < 23°C			Corrosive substances	CMR substances	Cargo tank equipment	
175 kPa ≤ P <sub>d50</sub> < 300 kPa without refrigeration						Pressure tank (400 kPa)
175 kPa ≤ P <sub>d50</sub> < 300 kPa, with refrigeration						Pressure relief valve/high velocity vent valve opening pressure: 50 kPa (with refrigeration (No. 1 in column (9)))
	150 kPa ≤ P <sub>d50</sub> < 175 kPa	110 kPa ≤ P <sub>d50</sub> < 150 kPa without water spraying				Pressure relief valve/high velocity vent valve opening pressure: 50 kPa
		110 kPa ≤ P <sub>d50</sub> < 150 kPa with water spraying			Vapour pressure > 10 kPa (calculation of the vapour pressure according to the formula for column 10, except that v <sub>a</sub> = 0.03)	Pressure relief valve/high velocity vent valve opening pressure: 10 kPa (with water spraying (No. 3 in column (9)))
			P <sub>d50</sub> < 110 kPa	Packing group I or II with P <sub>d50</sub> > 12.5 kPa or reacting dangerously with water or with gases in solution	Vapour pressure ≤ 10 kPa (calculation of the vapour pressure according to the formula for column 10, except that v <sub>a</sub> = 0.03)	Pressure relief valve/high velocity vent valve opening pressure: 10 kPa

## **Action to be taken**

13. The Dutch delegation requests the ADN Safety Committee to consider the proposed amendments in paragraph 11 or 12 above and to take action as it deems appropriate.
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