

## 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

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Item 2 of the provisional agenda

Tanks

26 August 2022

### **Reflection on document ECE/TRANS/WP.15/AC.1/2022/21: Calculation of the shell thickness for tanks with code P22DH (UN No. 1017 CHLORINE; UN No. 1076 PHOSGENE)**

**Transmitted by the Government of the Netherlands**

#### **Introduction**

1. In document ECE/TRANS/WP.15/AC.1/2022/21 clarification is sought for the conditions for calculating the shell thickness for tanks with code P22DH (UN No. 1017 CHLORINE; UN No. 1076 PHOSGENE).
2. The Netherlands agrees that there are inconsistencies in the reference to tables of 4.3.3.1.1 for UN 1017 Chlorine as raised in document ECE/TRANS/WP.15/AC.1/2022/21.
3. Section 6.8.3 modifies or completes the basic requirements of section 6.8.2 for tanks for the carriage of gases. As 6.8.2.1.17 is not modified or completed by section 6.8.3 it also applies. This means that the greatest value based on calculation pressure or test pressure in combination with Lambda should be used. The shell thickness for UN 1017 Chlorine shall be based on 22 bar, regardless of insulation, but test pressure may be lower.
4. However, the Netherlands is reluctant to modify the reference where to find the calculation pressure in 6.8.2.1.17 as this is correct for tanks for class 1 and 3 to 9. Alternatively, a reference to the table in 4.3.3.1.1 may be included as a new subsection 6.8.3.1.1.2. This would restore consistency between the sections 6.8.2 and 6.8.3.

#### **Proposal**

5. Split the existing 6.8.2.1.1 into a new subsection 6.8.2.1.1.1, with the existing wording of 6.8.2.1.1, and a new subsection 6.8.3.1.1.2 to read as follows:

*“6.8.3.1.1.2 For the calculation pressure as required by 6.8.2.1.17 to determine the shell thickness see 4.3.3.1.1.”*

#### **Discussion**

6. It may be argued why only for UN 1017 Chlorine and UN 1076 Phosgene a different approach is taken with a higher calculation pressure over the test pressure leading to possible confusion. For tanks for the carriage of the classes 3 to 9 this is practice when the calculation pressure is above 4 bar.
7. To prevent confusion the same approach as for UN 1749 “Chloride trifluoride” could be followed in the table of 4.3.3.2.5 that gives identical values for test pressure of insulated as well as non-insulated tanks. It is assumed that the higher test pressure for Chlorine receptacles will not lead to any problems in practice.

UN No.	Name	Classification code	Minimum test pressure for tanks				Maximum permissible mass of content per litre of capacity kg
			With thermal insulation		Without thermal insulation		
			MPa	bar	MPa	bar	
1017	Chlorine	2 TOC	<del>1.7</del> 2.2	17 22	<del>1.9</del> 2.2	19 22	1.25

8. Concerning UN 1076 Phosgene it may be argued that stipulating a calculation pressure for tanks is not appropriate as the table of 4.3.3.2.5 only allows for carriage in battery vehicles and MEGCs composed of receptacles. In Table A of Chapter 3.2 the tank code for UN 1076 may be changed from P22DH into PxDH.

9. According to 4.3.2.5, in addition to UN 1076 Phosgene also UN 1067 Dinitrogen tetroxide and UN 1081 Tetrafluoroethylene are only allowed to be carried in battery wagons/battery-vehicles and MEGCs composed of pressure receptacles. In the Dangerous Goods List in Table A of Chapter 3.2, they all have a “(M)” after the tank code in column 12. The explanatory notes for column 12 for (M) it is stated that:

*“The indication of a “(M)” after the tank code means that the substance can also be carried in battery wagons/battery vehicles or MEGCs.”*

10. In case of UN 1067, UN 1076 and UN 1081 this may be seen as misleading as these substances may not be carried in tanks, or battery wagons/battery-vehicles of MEGCs composed of tanks. To prevent confusion the explanatory note may be amended by adding wording such as *“unless otherwise specified in the table of 4.3.3.2.5”*.

11. In the case the calculation pressure for UN 1076 is deleted, based on the suggestion above, the same may be done with UN 1017, in which case the table of 4.3.3.2.5 as above is amended to give a 22 bar test pressure. In that case the table in 4.3.3.1.1 concerning the second position in the tank code may be simplified by deleting *“; or 22 = minimum calculation pressure in bar”*.

12. The Joint Meeting is invited to include these considerations in the discussions on this issue when views are exchanged on the proposals in document ECE/TRANS/WP.15/AC.1/2022/21.