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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, 19–23 September 2016

Item 2 of the provisional agenda

##### Tanks

## General requirement for safety valves on tanks and pressure rating of bursting discs

Transmitted by the Government of the Netherlands<sup>1, 2</sup>

### *Summary*

- Executive summary:** This proposal prevents unnecessary intervention of competent authorities and includes basic requirements for safety valves in line with Chapter 6.7.
- Action to be taken:** Amend subsection 6.8.2.2.10.
- Related documents:** Informal document INF.13 of the spring 2016 session.

### Introduction

1. In the case a safety valve is used on a hermitically closed tank the competent authority decides on the requirements for the safety valve and bursting disc. In practice, the competent authority will prescribe the pressure relation between bursting disc (frangible disc) and safety valve used in Chapter 6.7. This is practical because these arrangements are proven and the information for this equipment is widely available. To prevent unnecessary intervention of competent authorities and foster harmonisation it is proposed to introduce the pressure relation of Chapter 6.7 in subsection 6.8.2.2.10.

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<sup>1</sup> In accordance with the programme of work of the Inland Transport Committee for 2016-2017, (ECE/TRANS/2016/28/Add.1 (9.2)).

<sup>2</sup> Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2016/25.

2. Compared to Chapter 6.7 general requirements on safety valves in Chapter 6.8.2 are limited. To complete the requirements for safety valves additional wording is proposed based on the wording used in Chapter 6.7.

## Proposals

### 3. Proposal 1

Introduce a new first paragraph to 6.8.2.2.10 to read (new wording in *italic script*):

“6.8.2.2.10 *Safety valves shall be spring-loaded and be designed to prevent the entry of foreign matter, the development of any dangerous excess pressure and the leakage of liquid and gas.*

*The safety valves shall open automatically at a pressure not less than the maximum working pressure and shall be fully open at a pressure equal to 110% of the maximum working pressure. These valves shall after discharge, close at a pressure not lower than 10% below the pressure at which discharge starts and shall remain closed at all lower pressures. The safety valve shall be of a type that will resist dynamic forces including liquid surge.”.*

### 4. Proposal 2

Modify the second paragraph of 6.8.2.2.10 to read (new wording in *italic script*, deleted wording ~~stricken~~ through):

If tanks required to be hermetically closed are equipped with safety valves, these shall be preceded by a bursting disc and the following conditions shall be observed:

*The bursting disc shall rupture at a nominal pressure 10% above the start to discharge pressure of the safety valve. ~~The arrangement of the bursting disc and safety valve shall be such as to satisfy the competent authority. A pressure gauge or other suitable indicator shall be provided in the space between the bursting disc and the safety valve, to enable detection of any rupture, perforation or leakage of the disc which may disrupt the action of the safety valve.~~*

### 5. Proposal 3

Introduce a new transitional measure in case bursting discs with alternative values are applied (new wording in *italic script*):

“1.6.3.yy /1.6.4.xx *Fixed tanks (tank-vehicles) and demountable tanks/tank wagons (check)/tank-containers constructed before 1 January 2019 in compliance to the regulation in force up to 31 December 2018 but which do not conform to the requirements of 6.8.2.2.10 concerning the burst pressure of the bursting disc may continued to be used until the next leakproofness test as part of the periodic or intermediate inspection is performed.”.*

## Justification

6. The general requirements of proposal 1 are based on the existing wording for pressure-relief devices in 6.7.2.8. It is expected that all safety valves comply and that there is no need for a transitional measure.

7. In proposal 2 the pressure at which the bursting disc shall rupture is nominal, in other words, the rating given on the label of the disc, it shall not be tested. 10% above the start to discharge pressure (set point) of the safety valve is already applied in practice for tanks of 6.7.2 and will help to prevent rupture during filling or unloading at the maximum working pressure.

8. The final wording is deleted to prevent discussion if a particular leakage may “disrupt” the action of the safety valve or not.

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