

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

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Item 5 (c) of the provisional agenda

Transport of gases:

Miscellaneous

Comment on document ST/SG/AC.10/C.3/2023/34 – Additional consequential amendment on the pV-product

Transmitted by the expert from Germany

I. Introduction

1. Germany introduced the document ST/SG/AC.10/C.3/2023/34 during 63rd session of the Sub-Committee of Experts on the Transport of Dangerous Goods. The comments provided by the experts especially on proposal 4 and informal document INF.5 from Belgium are reflected in the following.

Since the rationales for the proposals have been provided in the documents mentioned above this informal paper provides just the revised proposals.

New text is underlined, deleted text is ~~striketrough~~. Modifications in comparison to document ST/SG/AC.10/C.3/2023/34 are additionally highlighted in **bold letters**.

II. Proposals

Proposal 1

2. Amend 4.1.1.19.3 (c) as follows:

“(c) The contents of the contained pressure receptacle(s) are limited in pressure ~~and volume~~, **in its useable water capacity and in its [test] pressure volume product** so that if totally discharged into the salvage pressure receptacle, the pressure in the salvage pressure receptacle at 65 °C will not exceed the test pressure of the salvage pressure receptacle (for gases, see packing instruction in P200 (3) in 4.1.4.1). The reduction of the useable water capacity of the salvage pressure receptacle, e.g., by any contained equipment and cushioning, shall be taken into account.”

Proposal 2

3. Amend the second paragraph in 6.2.3.5 as follows:

“Instructions on the safe handling and use of the salvage pressure receptacle shall be clearly shown in the documentation for the application to the competent authority and shall form part of the approval certificate. In the approval certificate, the pressure receptacles authorized to be transported in a salvage pressure receptacle shall be indicated. This indication of authorized pressure receptacles shall contain the following information:

The test pressure to which it is allowed to load the salvage pressure receptacle at maximum temperature, which limits the storage of pressure receptacles filled with liquified gases.

The usable water capacity and the maximum [test pressure volume] pV-product authorized for stored pressure receptacles(s), which limits the storage of pressure receptacles filled with compressed gases. The value of this maximum [test pressure volume] pV-product is the lowest value of either of the following:

- (a) the general limit of the [test pressure volume] pV-product of 1.5 Mio bar litres; or
- (b) the [test pressure volume] pV-product of the salvage pressure receptacle based on the test pressure to which it is allowed to be loaded at maximum temperature and its usable water capacity.

A list of the materials of construction of all parts likely to be in contact with the dangerous goods shall also be included in the approval certificate.”

Proposal 3

4. Amend the fourth paragraph in 6.2.3.5 and delete the NOTE in the current text as follows:

“The marking of salvage pressure receptacles according to 6.2.3 shall be determined by the competent authority taking into account suitable marking provisions of 6.2.2.7 as appropriate. The marking shall include the useable water capacity, and test pressure of the salvage pressure receptacle and the maximum [test] pressure volume product indicated by PVP as follows:

e.g. PVP1500 000BAR.L

For a better readability this marking starts with the letters “PVP” followed by the PVP-value and the relevant units. The PVP value includes a space in front of the last 3 digits of the value. The units of **the product of** pressure and water capacity are indicated by “BAR.L” with a dot between BAR and L. For a harmonised readability and for avoidance of later manipulation the marking shall not contain more spaces.

~~NOTE: These provisions for salvage pressure receptacles may be applied for new salvage pressure receptacles as from 1 January 2013, unless otherwise authorized, and shall be applied for all new salvage pressure receptacles as from 1 January 2014. Salvage pressure receptacles approved in accordance with national regulations may be used with the approval of the competent authorities of the countries of use.~~

NOTE: For a transitional period until 31 December 2030 salvage pressure receptacles with a water capacity of not more than 3000 litres may be used without bearing the additional PVP-mark.”

Proposal 4

5. Introduce the following definition of “pressure volume product” in section 1.2.1:

“Pressure volume product (pV-product; PVP) means the value resulting from multiplying the (useable) water capacity of a containment with its **relevant maximum pressure during filling and usage (e.g. test pressure or charging pressure) as referenced for the relevant kind of containment.** Expressed in bar litres.”

If this definition of the pV-product is not appropriate for being introduced in the definitions, the text in the proposals shall be completed by the words in [square brackets] as indicated above.

6. Introduce the following definition of “useable water capacity” in section 1.2.1:

“Usable water capacity means the water capacity of salvage pressure receptacles remaining after the installation of equipment into a salvage pressure receptacle, which is necessary for e.g., opening or drilling a stored pressure receptacle inside a closed salvage pressure receptacle. The usable water capacity may be lower than the water capacity originally approved and marked. Expressed in litres.”

7. Modify the additional phrase at the end of the definition of “Bundles of cylinders” in section 1.2.1. according to ST/SG/AC.10/AC.3/124/Add.1 as follows:

~~“The product of test pressure and total water capacity shall not exceed 1.5 million bar litres”.~~

“The test pressure volume product taking into account the total water capacity of all pressure receptacles in the bundle shall not exceed 1.5 million bar litres.”

This represents the proposal 2 of INF.5 from Belgium

Proposal 5

8. Delete square brackets from the amendments to section 1.2.1 proposed in document ST/SG/AC.10/C.3/2023/1 and adopted during the sixty-second session of the Sub-Committee (see: report ST/SG/AC.10/C.3/124/Add.1, para. 2).
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