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## 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

#### Fifty-eighth session

Geneva, 28 June-2 July 2021

Item 5 (c) of the provisional agenda

Transport of gases: miscellaneous

## Special Packing Provisions for goods of Class 2 – 4.1.6.1.8 Requirements for valve protection

Transmitted by the European Industrial Gases Association (EIGA)\*

### Introduction

1. Valve protection caps and valve guards shall meet the requirements of the appropriate edition of ISO 11117 "Transportable gas cylinders — Valve protection caps and valve guards — Design, construction and tests". Therefore, according to the applicable standards, valve guards shall be handled together with valve protection caps.
2. Requirements for shrouds (integral part of a welded cylinder or pressure drum for valve protection during transport, handling and storage) are part of the relevant design standard for the pressure receptacle (shell). Standard ISO 11117 explicitly excludes protection devices which are integral part of the pressure receptacle (shell). Therefore, according to the applicable standards, shrouds shall be handled separately.
3. Permanent protection attachments (integral part of the cylinder design permanently affixed to composite cylinders [type 2 to 5] covering part of or the entire surface of the cylinder, providing additional functions during handling, transport and use), also intended to serve as valve protection, are not yet included but shall be handled together with shrouds.
4. Until now, requirements for valves with inherent protection used for non-refillable pressure receptacles are not yet included.
5. For standards applicable to valves with inherent protection, the reference to the applicable paragraph of the standard should replace the current referenced annex on the impact test giving the test procedure but not the acceptance criterion.

### Proposal

6. The amended text for 4.1.6.1.8 is shown below, new text is *underlined and in italics* and deleted text is ~~struck through~~; the changes agreed for 4.1.6.1.8 at the December 2020

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\* A/75/6 (Sect.20), para. 20.51

session of the Sub-Committee as given in ST/SG/AC.10/C.3/114/Add.1 are already taken into account:

"4.1.6.1.8 Valves shall be designed and constructed in such a way that they are inherently able to withstand damage without release of the contents or shall be protected from damage which could cause inadvertent release of the contents of the pressure receptacle, by one of the following methods:

- (a) Valves are placed inside the neck of the pressure receptacle and protected by a threaded plug or cap;
- (b) Valves are protected by caps *or guards*. Caps shall possess vent-holes of sufficient cross-sectional area to evacuate the gas if leakage occurs at the valves;
- (c) Valves are protected by shrouds or permanent protection attachments ~~guards~~;
- (d) Pressure receptacles are transported in frames, (e.g. bundles); or
- (e) Pressure receptacles are transported in an outer packaging. The packaging as prepared for transport shall be capable of meeting the drop test specified in 6.1.5.3 at the packing group I performance level.

For pressure receptacles with valves as described in (b) ~~and (e)~~, the requirements of ISO 11117:1998, ISO 11117:2008 + Cor 1:2009 or ISO 11117:2019 shall be met. Requirements for shrouds and permanent protection attachments used as valve protection under 4.1.6.1.8 (c), are given in the relevant pressure receptacle shell design standards, see 6.2.2.1. ~~for valves~~ Valves with inherent protection used for refillable pressure receptacles shall meet the requirements of ~~annex A clause 4.6.2~~ of ISO 10297:2006 or ~~annex A clause 5.5.2~~ of ISO 10297:2014 or clause 5.5.2 of ISO 10297:2014 + A1:2017, or in case of self-closing valves, of ~~annex A clause 5.4.2~~ of ISO 17879:2017 shall be met. For pressure receptacles with self-closing valves with inherent protection, the requirements of annex A of ISO 17879:2017 shall be met. For valves with inherent protection used for non-refillable cylinders, the requirements of clause 9.2.5 of ISO 11118:2015 or of clause 9.2.5 of ISO 11118:2015 + A1:2019 shall be met.

For metal hydride storage systems, the valve protection requirements specified in ISO 16111:2008 or ISO 16111:2018 shall be met. "

## Justification

7. The proposal seeks to clarify the requirements for valve protection and does not add any additional requirements to the regulations.