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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****Sixtieth session**

Geneva, 27 June-6 July 2022

Item 5 (c) of the provisional agenda

**Transport of gases: miscellaneous****Updated ISO standards in Class 2****Submitted by the International Organisation for Standardisation (ISO)\*****Introduction**

1. The proposals in this document concern two revised standards, one amended standard and one new standard. There is also an editorial proposal to align the presentation of amendments to standards.

The titles of the standards are:

ISO 11114-2:2021, Gas cylinders – Compatibility of cylinder and valve materials with gas contents — Part 2: Non-metallic materials

ISO 9809-4:2021, Gas cylinders – Design, construction and testing of refillable seamless steel gas cylinders and tubes – Part 4: Stainless steel cylinders with an Rm value of less than 1 100 MPa

ISO 18119:2018 +Amd 1:2021 – Gas cylinders – Seamless steel and seamless aluminium-alloy gas cylinders and tubes — Periodic inspection and testing

ISO 23826:2021, Gas cylinders – Ball valves – Specification and testing

**Proposal 1**

2. In 4.1.6.1.2, 6.2.2.2 and 6.7.5.2.4 (a) replace “ISO 11114-2:2013” by “ISO 11114-2:2021”.

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

## Justification

3. The significant changes compared to the previous edition are as follows:
- (a) New non-metallic materials have been added to Table 1; and
  - (b) A new Table 2 has been added dealing with non-metallic lining materials for gas cylinders.

## Proposal 2

4. In the table in 6.2.2.1.1, in the row starting ISO 9809-4:2014 replace “Until further notice” by “Until 31 December 2028”. And in the same table in 6.2.2.1.1 add the following new row beneath the row starting ISO 9809-4:2014:

ISO 9809-4:2021	Gas cylinders – Design, construction and testing of refillable seamless steel gas cylinders and tubes – Part 4: Stainless steel cylinders with an Rm value of less than 1 100 MPa	Until further notice
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## Justification

5. The significant changes compared to the previous edition are as follows:
- (a) Update of Clause 5 Inspection and testing;
  - (b) Clarification of Figure 3 Deviation of the cylindrical part of the shell from a straight line and from vertical;
  - (c) Clarification of Clause 8.9 Neck threads;
  - (d) Modifications of Clause 9.1 General requirements for type approval, Clause 9.2 Prototype test, Subclause 9.2.4 Torque test for taper thread only and Annex A Evaluation of manufacturing imperfections;
  - (e) A new Subclause 9.2.5 Shear stress calculation for parallel threads;
  - (f) A new Clause 9.4 for cylinders ordered in small quantities.

## Proposal 3

6. In 6.2.1.6.1 (d) note 3, amend as follows (new text is underlined);

*“NOTE 3: The check of internal conditions of 6.2.1.6.1 (b) and the hydraulic pressure test of 6.2.1.6.1 (d) may be replaced by ultrasonic examination carried out in accordance with ~~ISO 18119:2018~~ ISO 18119:2018 + Amd 1:2021 for seamless steel and seamless aluminium alloy cylinder shells. For a transitional period until 31 December 2026 the standard ISO 18119:2018 may be used for this same purpose. For a transitional period until 31 December 2024 the standard ISO 10461:2005 + A1:2006 may be used for seamless aluminium alloy cylinder shells and ISO 6406:2005 may be used for seamless steel cylinder shells for this same purpose.”*

7. In the table in 6.2.2.4, in the row starting ISO 18119:2018 replace “Until further notice” by “Until 31 December 2026”. And in the same table in 6.2.2.4 add the following new row beneath the row starting ISO 18119:2018:

ISO 18119:2018 +Amd 1:2021	Gas cylinders – Seamless steel and seamless aluminium-alloy gas cylinders and tubes — Periodic inspection and testing	Until further notice
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### Justification

8. This amendment adds information on the length of acceptable flaws in Annex B and clarifies that Annex C lists gases corrosive to steel cylinders only.

### Proposal 4

9. In 6.2.2.3 add the following new row at the end of the first table:

ISO 23826:2021	Gas cylinders – Ball valves – Specification and testing	Until further notice
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### Justification

10. ISO 23826:2021 is a new standard specifying design, type testing, marking, manufacturing tests and examination requirements for ball valves used as closures of refillable transportable gas cylinders, pressure drums and tubes; main valves for cylinder bundles and valves for cargo transport units of Class 2 (e.g. battery vehicles and multiple-element gas containers (MEGCs)) which convey compressed gases, liquefied gases and dissolved gases.

11. Ball valves are explicitly excluded in other closure standards such as ISO 10297. Therefore, there is a strong incentive to adopt a separate standard covering ball valves used on pressure receptacles and cargo transport units.

### Proposal on editorial amendments

12. Amended standards which have been added recently to the Model Regulations have followed the practice of the ISO catalogue by using the abbreviation “Amd 1”. Some older references use the abbreviation “A1”. This proposal seeks to align the presentation of all standards with the form used in the ISO catalogue. Thus, the following amendments are proposed:

“3.3.1 SP379 (d)(i) replace “ISO 11114-1:2012 + A1:2017” by “ISO 11114-1:2012 + Amd 1:2017”

6.2.2.2 replace “ISO 11114-1:2012 + A1:2017” by “ISO 11114-1:2012 + Amd 1:2017”

6.2.2.3 replace “ISO 10297:2014 + A1:2017” by “ISO 10297:2014 + Amd 1:2017”

6.2.2.3 replace “ISO 14246:2014 + A1:2017” by “ISO 14246:2014 + Amd 1:2017”

6.2.2.4 replace “ISO 10461:2005/A1:2006” by “ISO 10461:2014 + Amd 1:2005”

6.7.5.2.4 (a) replace “ISO 11114-1:2012 + A1:2017” by “ISO 11114-1:2012 + Amd 1:2017”.”