International

ISO 10297

Gas cylinders — Cylinder valves — Specification and type testing

Bouteilles à gaz — Robinets de bouteilles — Spécifications et essais de type

Fourth edition
2024-04

Corrected version
2024-05

Reference number
ISO 10297:2024(en)

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Published in Switzerland

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This document was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 2, *Cylinder fittings*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 23, *Transportable gas cylinders*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 10297:2014), which has been technically revised. It also incorporates the Amendment ISO 10297:2014/Amd.1:2017.

The main changes are as follows:

— clarification of the Scope concerning different VIPR designs;

— addition of several new terms and definitions, e.g. VIPR types A, B and C for easy referencing of different design types;

— oxygen pressure surge test:

  — for VIPRs transferred from ISO 22435 and amended,

  — for RPVs transferred from ISO 15996 and amended,

  — reference for test equipment and procedure to ISO 11114-6,

— endurance test for specific VIPR designs transferred from ISO 22435 and amended;

— endurance test of the filling connection non-return valve transferred from ISO 22435 with clarification of the test procedure without changes to the acceptance criteria;

— acetylene decomposition test of VIPR designs transferred from ISO 22435 and amended;

— subclause 5.3 "Dimensions" removed;

— introduction of Table 2 for giving the different leakage rates depending on the valve design;

— introduction of recommendations for flow capacity values and reference to CGA V-9 for the respective determination as an example;

— introduction of a valve spindle impact test for pin-index valves not permanently protected during transport and use;

— introduction of the hydraulic pressure test also in the closed position for manually operated valves;

— introduction of an additional tightness test for pressure relief valves located upstream of the valve operating mechanism;

— Annex D "Example of test schedule" removed;

— information on changes and/or material variants within a valve design moved to new Annex F and amended.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

This corrected version of ISO 10297:2024 incorporates the following corrections:

— in 5.5.4.2, the first sentence has been modified to adjust to the criteria for the hydraulic pressure test given in 5.4.1;

— in 6.4, third paragraph, the missing test number "no. 14" has been added;

— in Annex A, third paragraph, the alternative value "or 40 J" has been added for the impact energy used in the impact test.

This document has been written so that it is suitable to be referenced in the UN Model Regulations.

The term “pressure receptacle” is used within this document to cover instances where no differentiation is necessary between gas cylinders, bundles of cylinders, pressure drums and tubes.

In this document, the unit bar is used, due to its universal use in the field of technical gases. It should, however, be noted that bar is not an SI unit, and that the corresponding SI unit for pressure is Pa (1 bar = 10^5 Pa = 10^5 N/m^2).

Pressure values given in this document are given as gauge pressure (pressure exceeding atmospheric pressure) unless noted otherwise.

Any tolerances given in this document include measurement uncertainties.