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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 28054-2023

Replacing GB/T 28054-2011

Bundles of seamless steel gas cylinders

钢质无缝气瓶集束装置

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document replaces GB/T 28054-2011 "Steel Seamless Gas Cylinder Clustering Device": Compared with GB/T 28054-2011, except for structural adjustment in addition to general and editorial changes, the main technical changes are as follows:

- a) The nominal working pressure range and the nominal volume range of a single gas cylinder have been changed (see Chapter 1, Chapter 1 of the:2011 edition);
- b) Changed the cluster device structure diagram (see 4.1,:2011 version of 4:1);
- c) The requirements for pipeline material grades and standards have been changed (see 5.1:2:1, 5:1:1:1 of the:2011 edition);
- d) Changed the requirements for safety accessories and instruments (see 5.2:4, 5:3:6 of the:2011 edition);
- e) Added requirements for implementation standards for gas cylinders in cluster devices (see 5.3:1:2);
- f) The form of mobile frame is deleted (see 5.3:4:1 of the:2011 version);
- g) Added requirements for vertical drop test (see 6.3:2);
- h) Added requirements for rotational drop test (see 6.3:3);
- i) Added type test requirements (see 7.3);
- j) Added requirements for design changes (see 7.4);
- k) Deleted the contents of nameplate type, nameplate font, and nameplate material (see 8.1:3 and 8:1:5 of the:2011 edition);
- l) Delete the storage and transportation requirements (see Chapter 9 of the:2011 edition);
- m) Delete the regulations on the safe use of filled combustible gas cluster devices (see Chapter 10 of the:2011 edition):

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1 Scope

This document specifies the types and models, technical requirements, test methods and specifications of steel seamless gas cylinder clustering devices (hereinafter referred to as clustering devices):

Specifications, inspection rules, markings, coatings, product certificates and product quality certificates:

This document applies to mobile cluster devices that can be refilled with compressed gas, high (low) pressure liquefied gas or mixed gas: cluster device the nominal working pressure

does not exceed 30MPa, the nominal volume of a single gas cylinder does not exceed 450L, and the total volume of gas cylinders in a cluster device does not exceed 3000L:

The operating environment temperature of the beam device is -40°C~60°C:

This document does not apply to cluster devices filled with highly toxic gases, nor to cluster devices fixed on vehicles:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 1527 Copper and copper alloy drawn tubes GB/T 5099.1 Seamless steel gas cylinders Part 1: Steel cylinders with a tensile strength of less than 1100MPa after quenching and tempering GB/T 5099.3 Steel seamless gas cylinders Part 3: Normalized cylinders GB/T 5099.4 Steel seamless gas cylinders Part 4: Stainless steel seamless gas cylinders GB/T 13005 Gas cylinder terminology GB/T 14976 Stainless steel seamless steel pipes for fluid transportation GB/T 15383 Gas cylinder valve air outlet connection type and size GB/T 19866 General principles for welding procedure regulations and qualifications GB/T 20801.4 Pressure piping specification for industrial piping Part 4: Fabrication and installation GB/T 33145 Large volume steel seamless gas cylinder GB/T 33215 Gas cylinder safety pressure relief device GB/T 41113 Skill assessment of brazing welders and brazing operators CB/T 3832 Technical requirements for copper tube brazing JB/T 6804 Anti-seismic pressure gauge NB/T 47013.5 Non-destructive testing of pressure equipment Part 5: Penetration testing NB/T 47014 Welding process qualification for pressure equipment NB/T 47018.1 Technical conditions for ordering welding materials for pressure equipment Part 1: General rules for procurement NB/T 47018.2 Technical conditions for ordering welding materials for pressure equipment Part 2: Steel welding rods NB/T 47018.3 Technical conditions for ordering welding materials for pressure equipment Part 3: Gas shielded arc welding steel wire and filler wire NB/T 47018.4 Technical conditions for ordering welding materials for pressure equipment Part 4: Submerged arc welding steel wire and flux TSG23 Gas Cylinder Safety Technical Regulations TSGZ6002 Special Equipment Welding Operator Assessment Rules