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

GB 24163-2009

Replacing GB/T 24163-2009

**Periodic inspection and evaluation of gas cylinders for stations
(English Translation)**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 24163-2009 "Periodic inspection and evaluation of compressed natural gas cylinders for station use" and is consistent with GB/T 24163-2009.

In addition to structural adjustments and editorial changes, the main technical changes are

as follows.

- a) The scope has been changed (see Chapter 1, Chapter 1 of the 2009 edition);
- b) Added the term "station gas cylinder group" and its definition (see Chapter 3);
- c) Deleted the requirements for inspection bodies (see 3.1 of the 2009 edition);
- d) Inspection tools and devices are added (see 4.1);
- e) The requirements on inspection cycle, advance inspection, etc. have been changed (see 4.2, 3.2 of the 2009 edition);
- f) The inspection items have been changed (see 4.3, 3.3 of the 2009 edition);
- g) Added specific content of document review (see 5.1.1);
- h) Changed the requirements for handling media in gas cylinders (see 5.2, 4.2 of the 2009 edition);
- i) The requirements for disassembly of accessories such as cylinder valves and end plugs have been changed (see 5.3, 4.3 of the 2009 edition);
- j) The dent assessment has been modified (see 6.2.4, 5.2.1 of the 2009 edition);
- k) Added bulge inspection and assessment (see 6.5);
- l) Added fully automatic ultrasonic testing (see Chapter 7);
- m) The requirements for wall thickness determination have been changed (see Chapter 8, Chapter 6 of the 2009 edition);
- n) Deleted the "Acoustic Inspection and Assessment" (see Chapter 7 of the 2009 edition);
- o) Added magnetic particle testing (see Chapter 9);
- p) Penetration testing has been added (see Chapter 10);
- q) Determination of mass and volume (see Chapter 10 of the 2009 edition) has been deleted;
- r) The requirements for volumetric residual deformation rate of the hydrostatic test have been modified (see 11.2, 11.1.4 of the 2009 edition);
- s) Added acoustic emission testing (see Chapter 12);
- t) Added end plug inspection (see Chapter 13);
- u) Changed the requirements for cylinder valve inspection (see Chapter 14, Chapter 13 of the 2009 edition);
- v) The requirements for airtightness test have been changed (see Chapter 15, Chapter 14 of the 2009 edition);

w) The content of post-inspection work has been changed (see Chapter 16, Chapter 15 of the 2009 edition);

x) The method for determining the volume of water in cylinders has been deleted (see Appendix A of the 2009 edition).

1 Scope

This document specifies the station-use gas storage steel seamless gas cylinders (hereinafter referred to as "gas cylinders") for containing natural gas, hydrogen, nitrogen, helium, air and other media for fixed use.

Regular inspection and assessment of gas cylinders.

This document is applicable to nominal working pressure of 10MPa~30MPa, nominal volume of 50L~3000L, and ambient temperature for gas cylinders with a temperature of -40°C~60°C.

This document does not apply to bottle-type containers designed as stationary pressure vessels.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

GB/T 8979 Pure nitrogen, high-purity nitrogen and ultra-pure nitrogen GB/T 9251 Gas cylinders hydrostatic test method GB/T 12137 Test method for gas cylinder airtightness GB/T 13005 Gas Cylinder Terminology GB/T 33145-2023 Large volume seamless steel gas cylinders NB/T 47013.3 Nondestructive testing of pressure equipment Part 3: Ultrasonic testing NB/T 47013.5 Nondestructive testing of pressure equipment Part 5: Penetrant testing NB/T 47013.8-2012 Nondestructive testing of pressure equipment Part 8: Leak detection NB/T 47013.9 Nondestructive testing of pressure equipment Part 9: Acoustic emission testing TSG23 Gas Cylinder Safety Technical Regulations

3 Terms and Definitions

The terms and definitions defined in GB/T 13005 and the following apply to this document.

A gas storage device consisting of a station gas cylinder installed on a supporting device.

Note: Including station gas cylinders, piping systems, support devices, safety devices, etc.

4.1 Inspection tools and equipment

The inspection agency should have at least the following tools and equipment.

- a) Explosion-proof lamp. used to inspect the internal and external surfaces of gas cylinders and accessories. The voltage and explosion-proof level should comply with relevant safety standards;
- b) Endoscope. used to inspect the inner surface of the gas cylinder (including the inner surface of the neck), should be high-definition color and have a storage function;