

ICS 13.220.10

CCS C84



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

**GB 4396-2024**

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**Carbon dioxide extinguishing agent**

二氧化碳灭火剂

**Issued on: November 28, 2024**

**Implemented on: December 1, 2025**

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**Issued by: State Administration for Market Regulation;  
Standardization Administration of the PRC**

## Table of Contents

|                                                                                                                                                                                                                                                            |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 1 Scope .....                                                                                                                                                                                                                                              | 1 |
| 2 Normative references .....                                                                                                                                                                                                                               | 1 |
| 3 Terms and Definitions .....                                                                                                                                                                                                                              | 1 |
| 4 Technical Requirements .....                                                                                                                                                                                                                             | 1 |
| 5 Test methods .....                                                                                                                                                                                                                                       | 2 |
| 5.1 Carbon dioxide purity .....                                                                                                                                                                                                                            | 2 |
| 5.2 Water content .....                                                                                                                                                                                                                                    | 2 |
| 5.3 Oxygen content .....                                                                                                                                                                                                                                   | 2 |
| 5.4 Oil content .....                                                                                                                                                                                                                                      | 2 |
| 5.5 Total sulfide content .....                                                                                                                                                                                                                            | 2 |
| 6 Inspection Rules .....                                                                                                                                                                                                                                   | 3 |
| 6.1 Inspection categories and items .....                                                                                                                                                                                                                  | 3 |
| 6.2 Sampling .....                                                                                                                                                                                                                                         | 3 |
| 6.3 Decision Rule .....                                                                                                                                                                                                                                    | 3 |
| 7 Marking, filling, packaging, transportation and storage .....                                                                                                                                                                                            | 4 |
| 7.1 Sign .....                                                                                                                                                                                                                                             | 4 |
| 7.2 Filling .....                                                                                                                                                                                                                                          | 4 |
| 4 Appendix A (Normative) Determination of the content of hydrogen, oxygen, nitrogen<br>and carbon monoxide in carbon dioxide 5 A.1 Method Summary 5 A.2 Instrument 5 A.3<br>Measurement conditions 5 A.4 Determination steps 6 A.5 Result Processing ..... | 6 |

## 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 4396-2005 "Carbon Dioxide Fire Extinguishing Agents". Compared with GB 4396-2005, except for structural adjustments and editorial changes, In addition, the main technical changes are as follows:

--- Changed the requirements and test methods for carbon dioxide purity, and added a rapid test method for carbon dioxide purity (see Chapter 4 and 5.1, Chapter 3 and

4.1 of the 2005 edition);

--- Changed the requirements and test methods for water content (see Chapter 4 and 5.2, Chapter 3 and

4.2 of the.2005 edition);

--- Added requirements and test methods for oxygen content (see Chapter 4 and 5.3);

--- Changed the requirements and test methods for oil content (see Chapter 4 and 5.4, Chapter 3 and

4.3 of the.2005 edition);

--- Changed the requirements and test methods for total sulfide content (see Chapter 4 and 5.5, Chapter 3 and

4.5 of the.2005 edition);

--- Deleted the requirements and test methods for alcohol content (see Chapter 3 and 4.4 of the.2005 edition);

--- Added relevant content on marking, filling, packaging, transportation and storage (see Chapter 7). This document was drafted with reference to ISO 5923.2012 "Fire protection and fire extinguishing equipment - Extinguishing agents - Carbon dioxide" and the degree of consistency is non-equivalent. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document is proposed and coordinated by the National Fire and Rescue Administration. The previous versions of this document and the documents it replaces are as follows:

## 1 Scope

GB 4396-2024 is the Chinese mandatory standard for carbon dioxide extinguishing agent, the medium of the fixed flooding systems that protect switchrooms, machinery spaces, turbine enclosures and archives. Its specification is short and unforgiving because the agent is also an asphyxiant discharged into a space that people may occupy: the purity determines the extinguishing concentration achieved, and the moisture determines whether the system works at all, since water in a high pressure carbon dioxide cylinder freezes at the discharge orifice and blocks it. The standard sets the requirements, the carbon dioxide assay, the moisture content, the oil content and the limits on the other impurities, together with the appearance and odour; then the test methods for each determination; then the inspection rules and the sampling; and then the marking, packaging, transport and storage, with the cylinder and safety requirements that a liquefied gas under high pressure carries. It is a GB standard without the recommended suffix: compliance is mandatory in China. It takes effect on 1 December 2025.

This document specifies the technical requirements, inspection rules, marking, filling,

packaging, transportation and storage of carbon dioxide fire extinguishing agents, and describes the corresponding Test method. This document applies to the research and development, production, filling and inspection of carbon dioxide fire extinguishing agents.

## 2 Normative references

The contents of the following documents constitute 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 1886.228-2016 National Food Safety Standard Food Additive Carbon Dioxide

GB/T 5832.2 Gas analysis - Determination of trace moisture - Part

## 3 Terms and definitions

There are no terms or definitions that require definition in this document.

## 4 Technical requirements

The technical requirements for carbon dioxide fire extinguishing agents shall comply with the provisions of Table 1. Table

1 Technical requirements for carbon dioxide fire extinguishing agents Serial number project indicator