



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

GB 1886.228-2016

**National food safety standard - Food additives - Liquid carbon
dioxide**

食品安全国家标准 食品添加剂 二氧化碳

(English Translation)

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Table of Contents

Foreword...	3
1 Scope...	4
2 Molecular Formula and Relative Molecular Mass...	4
3 Technical Requirements...	4
Appendix A Test Method...	7

Foreword

This Standard replaced GB 10621-2006 Food Additive - Liquid Carbon Dioxide.

Compared with GB 10621-2006, the major changes of this Standard are as follows.

- Change the name of the standard into "National Food Safety Standard - Food Additives - Carbon Dioxide";
- Increase the indicator requirements for solid carbon dioxide and gaseous carbon dioxide;
- Delete the indicator requirements for acidity, ethanol, other oxygen-containing organic matter, and phosphine;
- Increase the indicator requirements of ethylene oxide;
- Modify the item name of hydrocarbons into total volatile hydrocarbons;
- Modify the inspection methods for sulfur dioxide, total sulfur, benzene, methanol, acetaldehyde, vinyl chloride, grease, and evaporation residue;
- Add the capacitance method test method for moisture.

National Food Safety Standard - Food Additives -
Carbon Dioxide

1 Scope

This Standard is applicable to the food additive of carbon dioxide that takes the carbon dioxide gas as the raw material produced by produced alcohol fermentation, carbonate calcination, synthetic ammonia, ethylene catalytic oxidation and coal gasification

processes, and then produced through the processes of extraction, purification, drying, cooling, pressurization, etc.

2.1 Molecular formula

CO₂

3.1 Sensory requirements

Sensory requirements shall comply with the provisions of Table 1.

Appendix A

Test Method

A.1 Warning

Some reagents used in the test methods of this standard are toxic or corrosive, and appropriate safety and protective measures should be taken during operation.

A.2 General provisions

The reagents and water used in this standard refer to analytical reagents and the Class-III water specified in GB/T 6682 when other requirements are not specified. The used solution refers to an aqueous solution when it is not specified which solvent is used for preparation.

A.3 Identification test

A.4 Determination of carbon dioxide (CO₂) content

A.5 Determination of moisture

A.5.1 Method-I - Capacitance Method

A.5.1.2 Apparatus

Moisture analyser. Humidity sensitive capacitance sensor with acid resistance, gas circuit, data conversion and display system, the detection limit shall be no greater than 2μL/L.

A.5.1.3 Analysis procedures

A.5.2 Method-II - dew point method

The calibration of the instrument and the correction of the readings are the same as those in A.5.1, and determined according to the test method given in GB/T 5832.2.

A.6 Determination of oxygen (O₂)

Use an acid fuel cell or an applicable oxygen sensor to determine in accordance with the method specified in GB/T 6285. Liquid carbon dioxide shall be sampled and determined after gasification.

A.7 Determination of carbon monoxide (CO)

Determine according to the method specified in GB/T 8984; and the liquid carbon dioxide shall be sampled and determined after gasification.

A.8 Determination of grease

A.8.1 Summary of method

Use glacial acetic acid to dissolve the remaining grease after the carbon dioxide is evaporated. After adding water, the acetic acid solution becomes turbid; and the turbidity is analysed and quantified with the standard turbidity stage tube.

A.8.2 Reagents and materials

A.8.3 Apparatus

A.8.4 Analysis procedures

Appendix B

Relative Retention Values of Corresponding Components in Carbon Dioxide on Different Chromatographic Columns

B.1 Relative retention value of corresponding components in carbon dioxide on chromatographic column 1

B.2 Relative retention value of corresponding components in carbon dioxide on chromatographic column 2

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