ICS 67.040

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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国国家标准

GB/T 5009.7-2008

Replaces GB/T 5009.7-2003

Determination of reducing sugar in foods

食品中还原糖的测定

Issued on November 21, 2008 Implemented on March 1, 2009

Issued by General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China

Standardization Administration of the People's Republic of China

Contents

Foreword

This Standard will substitute GB/T 5009.7-2003 of *Determination of reducing sugar in foods*.

Compared with GB/T 5009.7-2003, this Standard is modified as follow:

——The detection limit is included;

——The categories of food samples are redefined;

——The back-titration formula of the first method "Direct Titration" is included;

——The calculated significant digits are defined.

The Standard is put forward and centralized by Ministry of Health of the People's Republic of China.

This Standard is drafted by: National Institute for Nutrition and Food Safety of Chinese Center for Disease Control and Prevention, and Beijing Center for Diseases Prevention and Control.

The main drafters of this Standard are: Yang Dajin, Chang Di, Zhao Xin, Wu Guohua, and Xue Ying.

The issuances of previous versions of the standard replaced by this standard are as follows:

——GB/T 5009.7-1985 and GB/T 5009.7-2003.

Determination of reducing sugar in foods

1 Scope

This Standard specifies the determination method of reducing sugar content in food.

This standard applies to the determination of reducing sugar content in food.

When 5.0g sample is taken, the detection limit of the direct titration is 0.25g/100g, and that of the permanganate titration is 0.5g/100g.

The First method Direct titration

2 Principle

Under the condition of heating and taking the methylene blue as the indicator, titrate the sample, from which the protein has been removed, with alkaline copper tartrate solution (marked by reducing sugar standard solution). Calculate the reducing sugar content according to the consumed volume of the sample solution.

3 Reagents

Unless otherwise specified, reagents applied in this method are all analytical reagents.

3.1 Hydrochloric acid (HC1).

3.2 Copper sulfate ($CuSO_4 \cdot 5H_2O$)

3.3 Methylene blue ($C_{16}H_{18}C1N_3S \cdot 3H_2O$): Indicator

3.4 Sodium potassium tartrate [$C_4H_4O_5KNa \cdot 4H_2O$]

3.5 Sodium hydroxide (N_aOH)

3.6 Zinc acetate [$Zn(CH_3COO)_2 \cdot 2H_2O$].

3.7 Glacial acetic acid ($C_2H_4O_2$).

3.8 Potassium ferrocyanide [$K_4Fe(CN)_6 \cdot 3H_2O$].

3.9 Dextrose ($C_6H_{12}O_6$).

3.10 Fructose ($C_6H_{12}O_6$).

3.11 Lactose ($C_6H_{12}O_6$).

3.12 Sucrose ($C_{12}H_{22}O_{11}$).

3.13 Alkaline copper tartrate A solution: Take 15g copper sulfate ($CuSO_4 \cdot 5H_2O$) and 0.05g methylene blue, and add water to dissolve and dilute to 1000 mL.

3.14 Alkaline copper tartrate A solution: Take 50g sodium potassium tartrate, 75g sodium

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