



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

**中华人民共和国国家标准**

GB 5413.38-2010

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**National food safety standard  
Determination of freezing point in raw milk**

**食品安全国家标准**

**生乳冰点的测定**

**Issued on Mar 26, 2010**

**Implemented on Jun 01, 2010**

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**Issued by the Ministry of Health of P.R of China**

## **Foreword**

This standard is non-equivalent to the international standard ISO 5764/IDF 108-2002 *Milk-Determination of freezing point - Thermistor cryoscope method (Reference method)*.

This standard is issued for the first time.

# National Food Safety Standard

## Determination of freezing point of raw milk

### 1 Scope

This standard stipulates the detection method of freezing point of raw milk by using a thermistor cryoscope.

This standard is applicable to the determination of freezing point of raw milk.

### 2 Normative Documents Cited by this Standard

The following referenced documents are indispensable for the application of this document.

For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

### 3 Terms and Definitions

#### Freezing Point of Raw Milk

Freezing point of raw milk is the value measured according to the method specified below and expressed in thousandth degrees Celsius ( $m^{\circ}C$ ).

### 4 Principle

A certain quantity of test portion of milk is put in the test tube and be supercooled to freezing point or below in a cold trap, and crystallization is induced by mechanical vibration at  $-3^{\circ}C$ , with a continuous release of heat, which causes the temperature to rise to the highest temperature and the temperature may remain constant for a short time, i.e. arrive at a plateau. Commence the determination. The plateau gives the freezing point of test portion.

### 5 Reagents

All reagents are analytical grade or above unless otherwise stated.

All water is 1<sup>st</sup> grade specified in GB/T 6682.

**5.1 Sodium Chloride (NaCl).** --- Finely ground sodium chloride is dried for at least 24 hours at  $130 \pm 5^{\circ}C$  in the drying oven and cooled to room temperature in a desiccator.

**5.2 Ethylene glycol (C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>).**

**5.3 Calibration solution (Sodium chloride standard solutions).**



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