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GB/T 24892-2010 / ISO 6321:2002

Animal and vegetable fats and oils - Determination of melting point in open capillary tubes (slip point)

(ISO 6321:2002, IDT)

动植物油脂 在开口毛细管中熔点（滑点）的测定

Issued on: June 30, 2010 **Implemented on: January 01, 2011**

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.

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Foreword

This Standard is identical to ISO 6321:2002, *Animal and vegetable fats and oils – Determination of melting point in open capillary tubes (slip point)* (English version).

This Standard is identical to the translation of ISO 6321:2002.

For ease of use, this Standard has made the following editorial changes:

a) Change the expression “this International Standard” to “this Standard”;

b) Use a decimal point “.” instead of a comma “,” as a decimal point;

c) Delete the “Foreword” of international standard;

d) Use GB/T 15687-2008 *Animal and vegetable fats and oils – Preparation of test sample* to replace ISO 661:20*03 Animal and vegetable fats and oils – Preparation of test sample*.

Annex A of this Standard is a normative annex, and Annex B is an information annex.

This Standard is proposed by the State Grain Administration.

This Standard is under the jurisdiction of the National Technical Committee 270 on Grain and Oil of Standardization Administration of China.

The drafting organization of this Standard: National Grain Administration Research Institute.

The main drafters of this standard: Lin Jiayong, Hao Xicheng.

Animal and vegetable fats and oils - Determination of melting point in open capillary tubes (slip point)

1 Scope

This Standard specifies two methods for the determination of the melting point in open capillary tubes, commonly known as the slip point, of animal and vegetable fats and oils (referred to as fats hereinafter).

-- Method A is only applicable to animal and vegetable fats which are solid at ambient temperature and which do not exhibit pronounced polymorphism.

-- Method B is applicable to all animal and vegetable fats which are solid at ambient temperature, and is the method to be used for fats whose polymorphic behaviour is unknown.

A method for the determination of the melting point of palm oil samples is given in Annex A.

Note 1: If applied to fats with pronounced polymorphism, method A will give different and less satisfactory results than method B.

Note 2: Fats which exhibit pronounced polymorphism are principally cocoa butter and fats containing appreciable quantities of 2-unsaturated, 1,3-saturated triacylglycerols.

2 Normative references

The following normative document contains provisions which, through reference in this text, constitute provisions of this Standard. For dated references, subsequent amendments to, or revisions of, this publication do not apply. However, parties to agreements based on this Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies.

GB/T 15687, Animal and vegetable fats and oils - Preparation of test sample (GB/T 15687-2008, ISO 661:2003, IDT)

3 Term and definition

For the purposes of this Standard, the following term and definition apply.

Melt a portion of the test sample as rapidly as possible to at least 5 °C ~ 10 °C above the temperature at which it is completely melted.

Dip two capillary tubes (5.1) into the melted test sample until columns of fat 10 mm ± 2 mm long are obtained. Immediately after filling the tubes, wipe them quickly with absorbent tissue to remove any fat adhering to the outer surfaces of the tubes. Immediately place the filled capillary tubes for a few seconds against a beaker filled with ice so that the fat solidifies. Place the tubes in the cooling bath (5.4) for 5 min. Continue in accordance with 8.3.

8.2 Preparation of the capillary tubes for method B

Melt a portion of the test sample as rapidly as possible to 5 °C ~ 10 °C above the temperature at which it is completely melted.

Cool the melted test sample, with occasional stirring, until its temperature is 32 °C ~ 34 °C and then stir continuously with the stirrer (5.3), allowing the fat to cool until the first signs of cloudiness appear.

Continue stirring by hand until the fat has a pasty consistency and then transfer the fat to a 100 mL beaker at 17 °C ± 2 °C. Store the fat at this temperature for a minimum of 24 h.

Push four capillary tubes (5.1) into the conditioned fat until a column of fat 10 mm ± 2 mm long is obtained in each tube. Wipe the tubes quickly with absorbent tissue to remove any fat adhering to the outer surfaces of the tubes. Store the tubes at 17 °C ± 2 °C until required.

8.3 Determination

8.3.1 Avoiding transfer of body heat to the fat, attach two capillary tubes prepared for method A (8.1) or for method B (8.2) to the thermometer (5.2) using small rubber bands so that the columns of fat are located at the lower ends of the tubes and lie adjacent to the bulb of the thermometer.

8.3.2 Fill the water jacket [5.5 a)] and the water heater [5.5 b)] with previously boiled water cooled to 15 °C. Clamp or suspend the thermometer with the attached capillary tubes centrally in the water jacket so that the lower ends of the capillary tubes are 30 mm below the surface of the water.

8.3.3 Operate the heating apparatus (5.5) so that a slow stream of water passes through the water jacket, regulating the heating so that the rise in temperature of the water, as measured by the thermometer in the water jacket, is about 3 °C/min ~ 4 °C/min for method A and 1 °C/min for method B.

8.3.4 For each of the two capillary tubes, note the temperature value indicated by the thermometer immediately the fat starts to rise in the tube.

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