BSI Standards Publication

Foodstuffs — Determination of water activity

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National foreword

This British Standard is the UK implementation of ISO 18787:2017. It supersedes BS ISO 21807:2004, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee AW/34, Food Technical Committee Chairmen.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Foreword

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 34, *Food products*.

INTERNATIONAL STANDARD ISO 18787:2017

Foodstuffs — Determination of water activity

WARNING — The use of this document may involve the use of hazardous materials, operations and equipment. This document does not purport to address all the safety risks associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices.

1 Scope

This document establishes basic principles and specifies requirements for the methods of determining water activity (a_w) of food products for human consumption and animal feed within a measurement range of 0 to 1.

The measurement principles are based on the dew-point measurement or on the determination of the change in electrical conductivity of an electrolyte or in the permittivity of a polymer.

The method does not apply to products stored below their freezing point (equivalent to the temperature at which ice crystals appear in the product), neither to products corresponding to a water-in-fat emulsion, nor to crystal products such as sugars, salt or minerals.

For products containing volatile compounds, such as alcohols, specific equipment adaptations may be necessary to apply the method.

The results of the interlaboratory studies that were carried out are given in Annex B.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
water activity
a_w
ratio of the partial water-vapour pressure in equilibrium with the product analysed to the water-vapour saturation pressure in equilibrium with pure water at the same temperature

$$a_w = \frac{pF(T)}{P_S(T)}$$

where