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**Canned evaporated milk — Determination
of tin content — Method using graphite
furnace atomic absorption spectrometry**

*Lait concentré en boîte — Détermination de la teneur en étain — Méthode
par spectrométrie d'absorption atomique à four graphite*



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Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 14377/IDF 168 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products*, and the International Dairy Federation (IDF), in collaboration with AOAC International. It is being published jointly by ISO and IDF and separately by AOAC International.

Foreword

IDF (the International Dairy Federation) is a worldwide federation of the dairy sector with a National Committee in every member country. Every National Committee has the right to be represented on the IDF Standing Committees carrying out the technical work. IDF collaborates with ISO and AOAC International in the development of standard methods of analysis and sampling for milk and milk products.

Draft International Standards adopted by the Action Teams and Standing Committees are circulated to the National Committees for voting. Publication as an International Standard requires approval by at least 50 % of IDF National Committees casting a vote.

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All work was carried out by the Joint ISO/IDF/AOAC Action Team, *Elements in milk and milk products*, of the Standing Committee on *Minor components and characterization of physical properties*, under the aegis of its project leader, Dr G. Ellen (NL).

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Canned evaporated milk — Determination of tin content — Method using graphite furnace atomic absorption spectrometry

1 Scope

This International Standard specifies a graphite furnace atomic absorption spectrometric method for the determination of the tin content of (sterilized) canned evaporated milk. It is applicable to samples with tin contents of more than 5 mg/kg.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International 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. Members of ISO and IEC maintain registers of currently valid International Standards.

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

3 Term and definition

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

3.1

tin content of canned evaporated milk

mass fraction of substances determined by the procedure specified in this International Standard

NOTE The tin content is expressed in milligrams per kilogram.

4 Principle

A test portion is diluted 100-fold with water, then further diluted (1:1) with 15 % ascorbic acid solution (matrix modifier). The atomic absorption is measured at a wavelength of 286,3 nm with an electrothermal (graphite furnace, atomization from the wall of the tube) atomic absorption spectrometer. The results are quantified by means of a calibration graph obtained by measuring calibration solutions prepared in 100-fold diluted (evaporated) milk with a very low tin content [bottled (evaporated) milk], further diluted 1:1 with 15 % ascorbic acid solution. As an alternative, platform atomization may be used, with $\text{NH}_4\text{H}_2\text{PO}_4/\text{Mg}(\text{NO}_3)_2$ as matrix modifier.