



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 9233-2:2013

Cheese, cheese rind and processed cheese  
- Determination of natamycin content -  
Part 2: High-performance liquid  
chromatographic method for cheese,  
cheese rind and processed cheese (ISO  
9233-2:2007 including Amd 1:2012)

## I.S. EN ISO 9233-2:2013

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English Version

**Cheese, cheese rind and processed cheese - Determination of  
natamycin content - Part 2: High-performance liquid  
chromatographic method for cheese, cheese rind and processed  
cheese (ISO 9233-2:2007 including Amd 1:2012)**

Fromage, croûte de fromage et fromages fondus -  
Détermination de la teneur en natamycine - Partie 2:  
Méthode par chromatographie liquide à haute performance  
pour fromage, croûte de fromage et fromages fondus (ISO  
9233-2:2007, Amd 1:2012 inclus)

Käse, Käserinde und Schmelzkäse - Bestimmung des  
Natamycingehalts - Teil 2: Verfahren mit Hochleistungs-  
Flüssigchromatographie für Käse, Käserinde und  
Schmelzkäse (ISO 9233-2:2007 einschließlich Amd  
1:2012)

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## **Foreword**

The text of ISO 9233-2:2007 including Amd 1:2012 has been prepared by Technical Committee ISO/TC 34 "Food products" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 9233-2:2013 by Technical Committee CEN/TC 302 "Milk and milk products - Methods of sampling and analysis" the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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### **Endorsement notice**

The text of ISO 9233-2:2007 including Amd 1:2012 has been approved by CEN as EN ISO 9233-2:2013 without any modification.

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140-2**

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**Cheese, cheese rind and processed  
cheese — Determination of natamycin  
content —**

Part 2:  
**High-performance liquid  
chromatographic method for cheese,  
cheese rind and processed cheese**

*Fromage, croûte de fromage et fromages fondus — Détermination de la  
teneur en natamycine —*

*Partie 2: Méthode par chromatographie liquide à haute performance  
pour fromage, croûte de fromage et fromages fondus*



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## Foreword

**ISO (the International Organization for Standardization)** is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 9233-2|IDF 140-2 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products* and the International Dairy Federation (IDF) and is being published jointly by ISO and IDF.

This first edition of ISO 9233-2|IDF 140-2, together with ISO 9233-1|IDF 140-1, cancels and replaces the first edition of ISO 9233:1991, which has been technically revised.

ISO 9233|IDF 140 consists of the following parts, under the general title *Cheese, cheese rind and processed cheese — Determination of natamycin content*:

- *Part 1: Molecular absorption spectrometric method for cheese rind*
- *Part 2: High-performance liquid chromatographic method for cheese, cheese rind and processed cheese*

## 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 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.

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

ISO 9233-2|IDF 140-2 was prepared by the International Dairy Federation (IDF) and Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products* and is being published jointly by IDF and ISO.

All work was carried out by the Joint ISO-IDF Action Team on *Selected food additives and vitamins* of the Standing Committee on *Analytical methods for additives and contaminants* under the aegis of its project leader, Mr. M. Carl (DE).

This first edition of ISO 9233-2|IDF 140-2, together with ISO 9233-1|IDF 140-1, cancels and replaces the first edition of IDF 140A:1992, which has been technically revised.

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# Cheese, cheese rind and processed cheese — Determination of natamycin content —

## Part 2: High-performance liquid chromatographic method for cheese, cheese rind and processed cheese

### 1 Scope

This part of ISO 9233|IDF 140 specifies a method for the determination of natamycin mass fraction in cheese, cheese rind and processed cheese of above 0,5 mg/kg and of the surface-area-related natamycin mass in cheese rind of above 0,03 mg/dm<sup>2</sup>.

### 2 Terms and definitions

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

#### 2.1

##### **natamycin content**

mass fraction of substances determined by the procedure specified in this part of ISO 9233|IDF 140

NOTE The natamycin content is expressed in milligrams per kilogram.

#### 2.2

##### **surface-area-related natamycin mass in cheese rind**

surface-area-related mass of substances determined by the procedure specified in this part of ISO 9233|IDF 140

NOTE The surface-area-related natamycin mass is expressed in milligrams of natamycin per square decimetre of cheese rind.

#### 2.3

##### **cheese rind**

outer layer of the cheese of thickness 5 mm, excluding the coating layer, if present.

### 3 Principle

A known quantity of sample is extracted with methanol. The extract is diluted with water followed by cooling to between –15 °C and –20 °C to precipitate most of the fat, followed by filtration. The natamycin content or surface-area-related natamycin mass is determined in the filtrate (after concentration, if necessary) by high-performance liquid chromatography (HPLC).

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