TC 34

INTERNATIONAL STANDARD ISO 5943

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Cheese and processed cheese products — Determination of chloride content — Potentiometric titration method

Fromages et fromages fondus — Détermination de la teneur en chlorures — Méthode par titrage potentiométrique

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5943 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in June 1977.

It has been approved by the member bodies of the following countries :

Australia	Hungary	Portugal
Austria	India	Romania
Belgium	Iran	South Africa, Rep. of
Bulgaria	Israel	Spain
Canada	Italy	Turkey
Czechoslovakia	Korea, Rep. of	United Kingdom
Egypt, Arab Rep. of	Mexico	U.S.A.
France	Netherlands	U.S.S.R.
Germany, F.R.	New Zealand	Venezuela
Ghana	Peru	Yugoslavia

No member body expressed disapproval of the document.

NOTE – The method specified in this International Standard has been developed jointly with the IDF (International Dairy Federation) and the AOAC (Association of Official Analytical Chemists, U.S.A.). The text as approved by the above organizations will also be published by FAO/WHO (Code of Principles concerning Milk and Milk Products and Associated Standards), by the IDF and by the AOAC (Official Methods of Analysis).

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Cheese and processed cheese products — Determination of chloride content — Potentiometric titration method

0 INTRODUCTION

The method described in this International Standard was originally intended for routine application since it is very fast and may be easily automated. However, there is some evidence that the precision of the method (repeatability and reproducibility) is comparable to, and may even be better than, that of the method described in ISO 2970, *Cheese — Determination of chloride content (Reference method).* Studies are therefore being undertaken with a view to deciding whether the method described in the present document will replace that described in ISO 2970 as the reference method.

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a potentiometric titration method for the determination of the chloride content of cheese and processed cheese products.

The method is applicable to all cheeses and processed cheese products containing more than 0,2 % (*m/m*) of chloride ion.

2 REFERENCE

ISO/R 707, *Milk and milk products — Sampling.*

3 DEFINITION

chloride content of cheese and processed cheese products : The substances determined by the procedure specified below, expressed as a percentage by mass of chloride ion or sodium chloride or any other chloride.

4 PRINCIPLE

Suspension of a test portion in water. Acidification with nitric acid and subsequent potentiometric titration of chloride ion with standard volumetric silver nitrate solution.

5 REAGENTS

All reagents shall be of analytical grade. Water used shall be distilled water or water of at least equivalent purity.

5.1 Silver nitrate, 0,08 to 0,12 N standard volumetric solution.

Dissolve 13,6 to 20,4 g of silver nitrate ($AgNO_3$) in water which is practically free from carbon dioxide and dilute to 1 000 ml. Standardize the solution against sodium chloride (NaCl), which has previously been dried at 300 °C, expressing the normality of the silver nitrate solution to four decimal places.

Store the solution away from direct sunlight.

5.2 Nitric acid, approximately 4 N solution.

6 APPARATUS

6.1 Device for grinding or grating cheese, capable of being easily cleaned.

6.2 Analytical balance.

6.3 Blender.

6.4 Potentiometer provided with a measuring electrode suitable for the determination of chloride (for example a silver electrode) and a reference electrode [for example a mercury(I) sulphate electrode].

6.5 Vessel suitable for blending and titrating.

6.6 Graduated cylinders, capacities 50 and 10 ml.

6.7 Burette, graduated in 0,1 ml, capacity 50 ml, conforming to ISO/R 385, or an **automatic plunger burette,** readable to the nearest 0,01 ml. The burette, or automatic plunger burette, should preferably be made of brown glass.

6.8 Stirrer.

7 SAMPLING

See ISO/R 707.

Sample cheese in brine by taking fragments of at least 200 g. Before analysis, dry the sample with filter paper.