SRI LANKA STANDARD 735 : PART 3 : 1987

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METHODS OF TEST FOR

MILK AND MILK PRODUCTS

PART 3 — DETERMINATION OF MOISTURE

SRI LANKA STANDARDS INSTITUTION

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Gr. 4

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SRI LANKA STANDARD
METHODS OF TEST FOR MILK AND MILK PRODUCTS
PART 3 : DETERMINATION OF MOISTURE

FOREWORD

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Sri Lanka Standards Institution on 1987-11-18, after the draft, finalized by the Drafting Committee on Milk and Milk Products, had been approved by the Agricultural and Food Products Divisional Committee.

In order to accommodate the large number of test methods within the scope of one standard, this standard is published in several parts.

This standard forms Part 3 of Sri Lanka Standard methods of test for milk and milk products.

The values used in this standard are given in SI units.

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with CS 102.

1 SCOPE

This part of the standard prescribes the methods of determination of moisture of milk powder, butter and cheese.

2 REFERENCES

ISO/R 707 Milk and milk products sampling

CS 102 Presentation of numerical values

CS 124 Test sieves

3 SAMPLING

Test samples for the use in the tests specified in this part shall be obtained in accordance with **ISO/R 707**.

4 DETERMINATION OF MOISTURE CONTENT OF MILK POWDER

4.1 Apparatus

4.1.1 *Flat-bottomed moisture dish with lid*, of metal such as stainless steel or nickel, of about 20 mm in height and 70 mm in diameter.

4.1.2 *Drying oven*, well ventilated and maintained at 100 ± 5 °C.

4.1.3 *Desiccator*

4.1.4 *Analytical balance*, with 0.1 mg accuracy.

4.2 Procedure

Weigh, to the nearest milligram, about 5 g of the sample, evenly distributed into a metal dish with lid previously dried at 100 ± 5 °C and weighed. Uncover the sample, dry the lid and dish with contents at 100 ± 5 °C for about 2 hours. Cover the dish while still in the oven. Transfer the dish to the desiccator and weigh soon after reaching room temperature. Repeat the process of drying, cooling and weighing at 30 minutes intervals until the difference between two successive weighings does not exceed 1 mg.

4.3 Calculation

$$\text{Moisture content, per cent by mass} = \frac{m_1 - m_2}{m_1 - m_0} \times 100$$

where,

m_0 = mass, in grams, of empty dish with lid;

m_1 = mass, in grams, of sample and dish before drying; and

m_2 = mass, in grams, of sample and dish after drying.

5 DETERMINATION OF MOISTURE CONTENT OF BUTTER

5.1 Apparatus

5.1.1 *Flat-bottomed dishes*, of metal such as nickel, aluminium or stainless steel of about 25 mm in height and 75 mm in diameter. A short galss rod shall be provided, preferably having one end flattened in the form of a disc, and of such length as to prevent it from falling into the melted butter when the flattened end rests on the bottom of the dish.

5.1.2 *Stirrer*, spatula or spoon.

5.1.3 *Desiccator*

5.1.4 *Drying oven*, well ventilated and maintained at 100 ± 5 °C.

5.1.5 *Analytical balance*, with 0.1 mg accuracy.

5.2 Procedure

5.2.1 Leave the sample in the original upopened container, until it is soft enough to facilitate through mixing to a homogenous state. Open the sample container and stir briefly with the stirrer (5.1.2) before weighing.

5.2.2 Dry a dish in the oven at 100 ± 5 °C for 1 hour. Allow the dish to cool in the desiccator and weigh to the nearest 0.1 mg. Weigh, to the nearest milligram, 2 g to 6 g (5 g to 6 g for unsalted butter) of the sample prepared as in 5.2.1 in the dish. Place it in the oven at 100 ± 5 °C for 2 hours. Cool the dish in the desiccator and weigh to the nearest 0.1 mg. Dry for another hour, cool and weigh. Repeat the process of drying, cooling and weighing at 30 minutes intervals until the difference between two successive weighings does not exceed 1 mg.

5.3 Calculation

$$\text{Moisture content, per cent by mass} = \frac{m_1 - m_2}{m_1 - m_0} \times 100$$

where,

m_0 = mass, in grams, of the empty dish;

m_1 = mass, in grams, of sample and dish before drying; and

m_2 = mass, in grams, of sample and dish after drying.

NOTE - Difference between two test results shall not exceed 0.1 g of moisture per 100 g of the product.

6 DETERMINATION OF MOISTURE CONTENT OF CHEESE

6.1 Apparatus

6.1.1 *Flat-bottomed dishes*, of nickel or other suitable metal, about 20 mm in height and 70 mm in diameter. Short glass rods shall be provided with widened flat ends.

6.1.2 *Drying oven*, well ventilated and maintained at 100 ± 5 °C

6.1.3 *Desiccator*

6.1.4 *Analytical balance*, with 0.1 mg accuracy.

6.2 Material

6.2.1 *Sand*, passing through 500 µm sieve conforming to CS 124 and retained by 180 µm sieve conforming to CS 124. Digest the sand with concentrated hydrochloric acid (rel. den. = 1.18). Wash thoroughly with water, dry and ignite till dull red.

6.3 Procedure

6.3.1 Grate the sample quickly or cut into small pieces.

6.3.2 Heat the metal dish, containing about 20 g of sand **(6.2)** and a glass rod, in the oven for one hour. Allow to cool in the desiccator for 30 minutes and weigh.

Place in the above dish, about 3 g of the sample prepared as in **6.3.1** and weigh accurately to the nearest milligram. Add few drops of distilled water, mix thoroughly and spread uniformly over the bottom of the dish.

Place the dish on a boiling water-bath for 30 minutes. Transfer the dish to the oven at 100 ± 5 °C for 4 hours. Remove the dish to the desiccator. Allow to cool and weigh. Dry for further 1 hour, cool and weigh. Repeat the process of drying, cooling and weighing at 1 hour intervals until the difference between two successive weighings does not exceed 1 mg.

6.4 Calculation

$$\text{Moisture content, per cent by mass} = \frac{m_1 - m_2}{m_1 - m_0} \times 100$$

where,

m_0 = mass, in grams, of the dish, sand and stirrer;

m_1 = mass, in grams, of the dish, sand, stirrer and the sample before drying; and

m_2 = mass, in grams, of the dish, sand, stirrer and the sample after drying.

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SRI LANKA STANDARDS INSTITUTION

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The principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote standardization and quality control by educational, consultancy and research activity.

The Institution is financed by Government grants, and by the income from the sale of its publications and other services offered for Industry and Business Sector. Financial and administrative control is vested in a Council appointed in accordance with the provisions of the Act.

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