SRI LANKA STANDARD 735 : PART 8 : 1990

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METHODS OF TEST FOR

MILK AND MILK PRODUCTS

PART 8 - DETERMINATION OF TOTAL ASH/ACID INSOLUBLE ASH

SRI LANKA STANDARDS INSTITUTION

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Gr.3

SRI LANKA STANDARDS INSTITUTION
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SRI LANKA STANDARD
METHODS OF TEST FOR MILK AND MILK PRODUCTS
PART 8 : DETERMINATION OF TOTAL ASH/ACID INSOLUBLE ASH

FOREWORD

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Sri Lanka Standards Institution on 1990 - 08 - 13, 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 8 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 an 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 total ash/acid insoluble ash of milk and milk products.

2 REFERENCES

ISO 707 Milk products sampling.
CS 102 Presentation of numerical values.

3 SAMPLING

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

4 DETERMINATION OF TOTAL ASH

4.1 Preparation of the sample

4.1.1 *Sweetened condensed milk*

Warm the container in a water bath at 40 °C for 30 minutes. Open the container and transfer all material adhering to the lid in to the container. Mix thoroughly with a spoon or spatula so that the upper and lower layers are mixed well.

4.1.2 *Infant formulae*

Open the container and thoroughly mix the sample using a spoon or spatula.

4.2 Apparatus

4.2.1 *Flat-bottemed dish,* of stainless steel, porcelain, silica or platinum.

4.2.2 *Oven,* maintained at 100 ± 2 °C.

4.2.3 *Muffle furnace,* maintained at 550 ± 10 °C.

4.2.4 *Desiccator*

4.3 Procedure

Dry the dish (4.2.1) in the oven, (4.2.2) cool in the desiccator and weigh. Weigh, to the nearest milligram, about 2 g to 3 g of the prepared sample in the above dish. Heat gently on a flame until the charring is complete. Transfer to the muffle furnace (4.2.3) and heat till a grey ash results (See Note). Cool in the desiccator and weigh. Repeat the process of heating, cooling and weighing at 30 minute intervals until the difference between two successive weighings does not exceed 1 mg.

Reserve the dried material for the determination of acid insoluble ash, if required.

NOTE

In the case of sweetened condensed milk, it is necessary to do the ashing under observation as the sucrose in sweetened condensed milk swells considerably during the charring process and may swel over the dish.

4.4 Calculation

Total ash, per cent by mass $= \frac{m_2 - m_0}{m_1 - m_0} \times 100$

where,

m_0 is the mass, in grams, of the empty dish;
m_1 is the mass, in grams, of the dish with the sample; and
m_2 is the mass, in grams, of the dish with the ash.

5 DETERMINATION OF ACID INSOLUBLE ASH

5.1 Reagent

Hydrochloric acid, 5 mol/l solution.

5.2 Procedure

Add 25 ml of hydrochloric acid (5.1) into the dish containing ash obtained in 4.3. Cover with a watch glass and heat on a water bath for 10 minutes. Cool and filter through an ashless Whatman filter paper No. 42 or equivalent. Wash the filter paper with hot water until the washings are free from acid. Return the filter paper into the dish and heat in the oven (4.2.2). For about 3 hours. Ignite in a muffle furnace (4.2.3) for one hour. Cool in the desiccator and weigh. Repeat the process of heating, cooling and weighing at 30 minute intervals until the difference between two successive weighings does not exceed 1 mg.

5.3 Calculation

Acid insoluble ash, per cent by mass $= \frac{m_3 - m_0}{m_1 - m_0} \times 100$

where,

m_0 is the mass, in grams, of the empty dish (see 4.3);
m_1 is the mass, in grams, of the dish with the sample (see 4.3); and
m_3 is the mass, in grams, of the dish with the acid insoluble ash.

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