SRI LANKA STANDARD 313 : PART 3 / SECTION 14 : 2010
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METHODS FOR ANALYSIS OF ANIMAL AND VEGETABLE FATS AND OILS

PART 3 – DETERMINATION OF FOREIGN SUBSTANCES AND PARAMETERS AFFECTING QUALITY AND STABILITY

Section 14 : Determination of mineral acids

(Second Revision)

SRI LANKA STANDARDS INSTITUTION

Sri Lanka Standard

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Gr. 2

SRI LANKA STANDARDS INSTITUTION
No. 17, Victoria Place,
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Colombo - 08.
Sri Lanka

Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This standard does not purport to include all the necessary provisions of a contract.

Sri Lanka Standard
METHODS FOR ANALYSIS OF ANIMAL AND VEGETABLE FATS AND OILS
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FOREWORD

This Sri Lanka Standard was approved by the Sectoral Committee on Agricultural and Food Products and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2010-10-15.

This standard was first published in 1976 and subsequently revised in 1993. This standard prescribes the general methods for determining whether the material conforms to the requirements of the relevant individual standards and thus form a necessary adjunct to series of Sri Lanka Standard Specification for individual oils and fats. However, keeping in view the experience gained during the years and various International standards brought out by the International Organization for Standardization (ISO) on the subject of testing animal and vegetable fats and oils, it was decided to revise it with a view to updating the existing methods of test and by incorporating those not covered earlier.

In order to accommodate large number of test methods within the scope of one standard, this standard is published in four parts covering different characteristics as indicated below.

Part 1 Determination of physical characteristic
Part 2 Determination of chemical characteristics
Part 3 Determination of foreign substances and parameters affecting quality and stability
Part 4 Determination of principle constituents and natural constituents.

1 SCOPE

1.1 This section prescribes a method for the determination of mineral acids in fats and oils.

2 DEFINITION

For the purpose of this section the following definition shall apply :

2.1 **mineral acid** (or **inorganic acid**) : An acid derived from one or more inorganic compounds. A mineral acid is not organic and all mineral acids release hydrogen ions when dissolved in water.

3 APPARATUS

3.1 *Separating funnel*s, 500-ml capacity

3.2 *Other laboratory equipment*

4 REAGENTS

All the reagents shall be of recognized analytical grade and the water used shall be distilled water or water of equivalent purity.

4.1 *Sodium hydroxide or potassium hydroxide*, 0.01 M aqueous solution

4.2 *Light petroleum*, b.p. 40 °C to 60 °C

4.3 *Methyl orange indicator*, 0.1 per cent solution in 95 per cent (V/V) ethanol

5 PROCEDURE

Weigh accurately about 50 g of the oil into a 500-ml separating funnel. Wash the oil with three 50-ml to 60-ml portions of hot distilled water, giving the separating funnel a good swirl but not so vigorously as to cause formation of a stable emulsion. Combine the hot water washings in a second separating funnel, cool to room temperature (about 30 °C) and extract once with 50 ml of the light petroleum to remove traces of fatty acids. Titrate the water washings with the aqueous alkali using methyl orange as indicator. The end point is reached when the addition of a single drop produces a slight but definite colour persisting for at least 15 seconds.

6 CALCULATION

$$Mineral\ \ acidity\ = \frac{100\ x\ V}{m}\ \text{ml of 0.01 M acid per 100 g.}$$

where,

V = volume, in millilitres, of 0.01 M alkali required, and
m = mass, in grams, of oil taken.

SRI LANKA STANDARDS INSTITUTION

The Sri Lanka Standards Institution (SLSI) is the National Standards Organization of Sri Lanka established under the Sri Lanka Standards Institution Act No. 6 of 1984 which repealed and replaced the Bureau of Ceylon Standards Act No. 38 of 1964. The Institution functions under the Ministry of Science & Technology.

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.

The development and formulation of National Standards is carried out by Technical Experts and representatives of other interest groups, assisted by the permanent officers of the Institution. These Technical Committees are appointed under the purview of the Sectoral Committees which in turn are appointed by the Council. The Sectoral Committees give the final Technical approval for the Draft National Standards prior to the approval by the Council of the SLSI.

All members of the Technical and Sectoral Committees render their services in an honorary capacity. In this process the Institution endeavours to ensure adequate representation of all view points.

In the International field the Institution represents Sri Lanka in the International Organization for Standardization (ISO), and participates in such fields of standardization as are of special interest to Sri Lanka.

Printed at the Sri Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.

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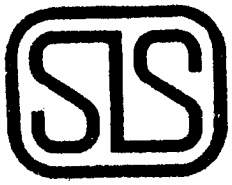

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