
**Edible salt — Determination of
sulphate content — Barium
sulphate — Gravimetric method**

ICS: 67.220.20

Descriptors: sodium chloride, edible salt, chemical analysis, volumetric analysis, determination of sulphate.

Foreword

This Ethiopian Standard has been prepared under the direction of the Food Products Standards Committee and published by the Quality and Standards Authority of Ethiopia (QSAE).

In preparing this standard references were made to the following:

- Indian Standard, IS 797:1982 "*Specification for common salt for chemical Industries*".
- Indian Standard, IS 7224:1982 "*Specification for iodized salt*".

Acknowledgement is made for the use of information from the above publications.

Edible salt — Determination of sulphate content — Barium sulphate gravimetric method

1 Scope

This Ethiopian Standard specifies the routine method for determination of sulphate content in salt.

2 Normative reference

The following standards contain provision which through reference to this text, constitute provisions of this Ethiopian Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision and parties to agreements based on this Ethiopian Standard are encouraged to investigate the possibility of applying the most recent edition of the Ethiopian Standard indicated below. Registers of currently valid standards are maintained in the Quality and Standards Authority of Ethiopia.

ES 299:2000, *Sampling*.

3 Reagents

The following reagents of recognized analytical reagent quality shall be used:

- 3.1 Dilute hydrochloric acid, approximately 4 N.
- 3.2 Barium chloride solution, approximately 10 per cent.
- 3.3 Methyl orange 0.5%.

4 Sampling

Samples shall be taken in accordance with ES 299.

5 Procedure

5.1 Test portion

Weigh about 10 g of dried common salt or about 20 g of dried table salt in a beaker.

5.2 Determination

Dissolve the test portion in about 400ml water. Filter and wash the resulting solution and wash the residue until it is free from soluble salt. Collect the filtrate and washings. Add one drop of methyl orange and 10 ml or more of dilute hydrochloric acid (3.1) till it is pink and then boil. Add 10 to 12 ml barium chloride solution (3.2) to the boiling solution drop by drop so that addition is in slight excess and the boiling continued for 4 minutes to obtain a granular precipitate. It is allowed to stand for 4 hours and filtered through a weighed sintered glass crucible or Gooch crucible.

Filter the precipitate and wash till it is free from chloride. Ignite and determine as barium sulphate.

6 Expression of results

The percentage by mass of sulphate (as SO₄) shall be calculated as follows:

$$41.13 \frac{M_1}{M_2}$$

Where,

*M*₁ mass, in grams, of barium sulphate, and

*M*₂ mass, in grams, of dried sample taken for the test from ES ISO 2483

7 Test report

The test report shall include the following information:

- a) a reference to this Ethiopian Standard;
- b) the result and method of expression used;
- c) all information necessary for complete identification of sample;
- d) any unusual features noted during the determination; and
- e) any operation not included in this Ethiopian Standard or in the Ethiopian Standard to which reference is made, or regarded as optional.

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Quality and Standards Authority of Ethiopia



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