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Solid fertilizers — Determination of mineral-acid-soluble sulfate content — Gravimetric method

Matières fertilisantes solides — Détermination de la teneur en sulfates solubles dans les acides minéraux — Méthode gravimétrique

Reference number
ISO 10084:1992(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 10084 was prepared by Technical Committee ISO/TC 134, *Fertilizers and soil conditioners*, Sub-Committee SC 4, *Chemical analysis*.

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Solid fertilizers — Determination of mineral-acid-soluble sulfate content — Gravimetric method

1 Scope

This International Standard specifies a method for the gravimetric determination of the mineral-acid-soluble sulfate content of solid fertilizers. The method is applicable to fertilizers with sulfate contents, expressed as SO_3, from 3 % (*m/m*) to 50 % (*m/m*).

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 8358:1991, *Solid fertilizers — Preparation of samples for chemical and physical analysis.*

3 Principles

Dissolution of soluble sulfates in hydrochloric acid solution. Precipitation of sulfate ions in a hydrochloric acid medium with barium chloride. Filtration, washing, drying, ignition and weighing of the precipitate.

4 Reagents

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

4.1 Hydrochloric acid solution, ρ_{20} = 1,19 g/ml.

4.2 Barium chloride dihydrate solution, $c(BaCl_2 \cdot 2H_2O)$ = 122 g/l.

4.3 Silver nitrate solution, $c(AgNO_3)$ = 5 g/l.

5 Apparatus

Ordinary laboratory apparatus and the following.

5.1 Electric hot-plate

5.2 Filter crucibles with **porcelain disc**, porosity grade P10, pore size index 4 µm to 10 µm.

5.3 Oven, capable of being maintained at a temperature of 120 °C ± 5 °C.

5.4 Oven, capable of being maintained at a temperature of 800 °C ± 50 °C.

5.5 Desiccator, filled with a suitable desiccant.

6 Preparation of the test sample

Prepare the laboratory sample according to ISO 8358 and transfer at least 50 g to the laboratory for analysis.

7 Procedure

7.1 Test portion

Weigh, to the nearest 0,1 mg, the mass of the test sample (clause 6) which, according to table 1, corresponds with the expected acid-soluble sulfate content.

NOTE 1 The amount of SO_3 present in the test portion should be 200 mg to 600 mg.