BS ISO 17319:2015

BSI Standards Publication

Fertilizers and soil conditioners — Determination of water-soluble potassium content — Potassium tetraphenylborate gravimetric method

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National foreword

This British Standard is the UK implementation of ISO 17319:2015.

The UK participation in its preparation was entrusted to Technical Committee CII/37, Fertilisers and related chemicals.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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INTERNATIONAL STANDARD

ISO 17319

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Fertilizers and soil conditioners — Determination of water-soluble potassium content — Potassium tetraphenylborate gravimetric method

Matières fertilisantes — Dosage de la teneur en potassium — Méthode gravimétrique au tétraphénylborate de potassium

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Foreword

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 134, *Fertilizers and soil conditioners.*

INTERNATIONAL STANDARD ISO 17319:2015(E)

Fertilizers and soil conditioners — Determination of water-soluble potassium content — Potassium tetraphenylborate gravimetric method

1 Scope

This International Standard specifies a gravimetric method for the determination of the water-soluble potassium content of test solutions of fertilizers. It is suitable for use in arbitration and for reference purposes.

This International Standard is applicable to those fertilizers containing more than 1,0 % K_2O or equivalent amount of K content.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*

ISO 5317, *Fertilizers — Determination of water-soluble potassium content — Preparation of the test solution*

3 Principle

Precipitation of potassium ions present in an aliquot portion of the test solution (previously treated with bromine water and activated charcoal if cyanamide and/or organic materials are present) by sodium tetraphenylborate in a weakly alkaline medium in the presence of disodium ethylenediamine-tetraacetatedihydrate (EDTA disodium salt) to eliminate interference by ammonium ions and other metal cations.

Filtration of the precipitate, drying and weighing.

4 Reagents

WARNING — Sodium hydroxide is corrosive, bromine is corrosive, oxidative and toxic. The related operations shall be performed in fume hood. This standard does not point out all possible safety problems, and the user shall bear the responsibility to take proper safety and health measures, and ensure the operations compliant with the conditions stipulated by the related laws and regulations of the state.

During the analysis, use only reagents of recognized analytical grade, and water conforming to grade 3 of ISO 3696:1987

4.1 Sodium tetraphenylborate, approximately 15 g/L solution.

Dissolve 7,5 g of sodium tetraphenylborate [$NaB(C_6H_5)_4$] in 480 ml of water. Add 2 ml of the sodium hydroxide solution (4.4) and 20 ml of a 100 gram/litre (g/L) solution of magnesium chloride hexahydrate ($MgCl_2{\cdot}6H_2O$). Stir for 15 min and filter through the filter paper (5.2).

This solution may be stored in a plastics bottle for not longer than 1 month. Filter immediately before use.