

BS EN 15920:2011



BSI Standards Publication

Fertilizers — Extraction of phosphorus soluble in 2 % citric acid

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

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English Version

Fertilizers - Extraction of phosphorus soluble in 2 % citric acidEngrais - Extraction du phosphore soluble dans l'acide
citrique à 2 %Düngemittel - Extraktion des in 2%iger Citronensäure
löslichen Phosphors

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Contents

Page

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Sampling	4
5 Principle	4
6 Reagents	4
7 Apparatus	5
8 Procedure	5
8.1 Test portion	5
8.2 Extraction	5
Bibliography	6

Foreword

This document (EN 15920:2011) has been prepared by Technical Committee CEN/TC 260 “Fertilizers and liming materials”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2011, and conflicting national standards shall be withdrawn at the latest by December 2011.

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1 Scope

This European Standard specifies the procedure for the determination of phosphorus soluble in 2 % citric acid (20 g/l).

The method is applicable only to types of basic slag (see [1], Annex I A).

2 Normative references

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

EN 1482-2, *Fertilizers and liming materials — Sampling and sample preparation — Part 2: Sample preparation*

EN 12944-1:1999, *Fertilizers and liming materials and soil improvers — Vocabulary — Part 1: General terms*

EN 12944-2:1999, *Fertilizers and liming materials and soil improvers — Vocabulary — Part 2: Terms relating to fertilizers*

CEN/TS 15959, *Fertilizers — Determination of extracted phosphorus*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12944-1:1999 and EN 12944-2:1999 apply.

4 Sampling

Sampling is not part of the method specified in this document. A recommended sampling method is given in EN 1482-1.

Sample preparation shall be carried out in accordance with EN 1482-2. Grinding is recommended for homogeneity reasons.

5 Principle

Extraction of phosphorus from the sample with a 2 % citric acid solution (20 g/l) under specified conditions.

6 Reagents

6.1 Water, distilled or demineralized.

6.2 2 % citric acid solution, $\rho = 20$ g/l, prepared from crystallized citric acid ($C_6H_8O_7 \cdot H_2O$).

Verify the mass concentration of the citric acid solution by titrating 10 ml of the latter with a sodium hydroxide standard solution, $c = 0,1$ mol/l, using phenolphthalein as indicator.

If the solution is correct, 28,55 ml of the standard solution should be used.

7 Apparatus

7.1 **Common laboratory equipment and glassware.**

7.2 **600 ml flask**, with sufficiently wide neck allowing the liquid to be shaken thoroughly.

7.3 **Rotary shaker**, 35 r/min to 40 r/min.

7.4 **Dry pleated filter**, free from phosphates.

8 Procedure

8.1 Test portion

Weigh, to the nearest 0,001 g, 5 g of the prepared sample and place it in a dry 600 ml flask (7.2).

8.2 Extraction

Add to the test portion (500 ± 1) ml of the citric acid solution (6.2) at (20 ± 1) °C. When adding the first millilitres of the solution, shake vigorously by hand to avoid the formation of lumps and to prevent the substance sticking to the sides. Close the flask with a rubber stopper and shake it in the rotary shaker (7.3) for exactly 30 min at a temperature of (20 ± 2) °C.

Filter the solution immediately through a dry pleated filter (7.4), into a dry glass receiver (7.1) and discard the first 20 ml of the filtrate. Continue the filtering until a sufficient quantity of filtrate is obtained to carry out the phosphorus determination according to CEN/TS 15959.

Bibliography

- [1] Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilisers, Official Journal L 304, 21/11/2003, P. 0001-0194, Annex IV, method 3.1.3
- [2] EN 1482-1, *Fertilizers and liming materials — Sampling and sample preparation — Part 1: Sampling*

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