

SCHEDULE 2

METHODS OF ANALYSIS

PART II

5a.

EXTRACTION OF PHOSPHORUS BY MINERAL ACIDS (TOTAL PHOSPHORUS)

1 SCOPE AND FIELD OF APPLICATION

1. This method is applicable to fertilisers in Groups 2(b), 2(c), 2(d), 3(b) and 4(c) of Section A and Group 5 of Section B of the Table in Schedule 1 of the Fertilisers Regulations (Northern Ireland) 1990(1) in respect of which the indication of total phosphorus is required.

2 PRINCIPLE

2. The phosphorus is extracted from the fertiliser with a mixture of nitric acid and sulphuric acid.

3 REAGENTS

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3.1 Sulphuric acid (d = 1.84 g/ml).

3.2 Nitric acid (d = 1.42 g/ml).

4 APPARATUS

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4.1 A Kjeldahl flask, with a capacity of at least 500 ml, or a 250 ml round-bottomed flask with a glass tube forming a reflux condenser.

5 PREPARATION OF THE SAMPLE

5. See Method 1.

6 PROCEDURE

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Extraction

6.1 Weigh to the nearest 0.001 g, 2.5 g of the prepared sample and place it in a dry Kjeldahl flask (4.1). Add 15 ml water and stir so as to suspend the substance. Add 20 ml nitric acid (3.2) and carefully add 30 ml sulphuric acid (3.1) (see NOTE). When the initial violent reaction has ceased, slowly bring the contents of the flask to boiling and boil for 30 minutes. Allow to cool and then carefully add with mixing about 150 ml water. Boil for 15 minutes. Cool completely and transfer the liquid quantitatively to a 500 ml graduated flask. Make up to volume, mix and filter through a dry fluted filter, discarding the first portion of the filtrate.

(1) [S.R. 1990 No. 286](#)

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Determination

6.2 Determine the phosphorus according to Method 6a or Method 6b on an aliquot part of the clear filtrate.

Note

If the sample contains cellulosic matter, the following procedure is suggested to avoid excessive frothing during digestion:

Weigh to the nearest 0.001 g, 2.5 g of the prepared sample and place it in a dry Kjeldahl flask. Add 30 ml sulphuric acid (3.1) and carefully boil until most of the organic matter has been destroyed. Allow to cool, add 15 ml water and 20 ml nitric acid (3.2); bring to the boil and continue boiling for 30 minutes. Continue as described in 6.1 from “Allow to cool and then”.