

SCHEDULE 2

METHODS OF ANALYSIS

9c.

EXTRACTION OF PHOSPHORUS BY 2% CITRIC ACID

1 SCOPE

1. This method is for the determination of phosphorus soluble in 2% citric acid (20 g per litre).

2 FIELD OF APPLICATION

2. Only applicable to basic slag fertilisers in Group 2(a) of Section A, and Groups 1, 2 and 4 of Section B of the Table in Schedule 1 of the Fertilisers Regulations (Northern Ireland) 1990(1).

3 PRINCIPLE

3. Extraction of phosphorus from the fertiliser with a 2% citric acid solution (20 g per litre) in given conditions.

4 REAGENT

4. 2% citric acid solution (20 g per litre), prepared from citric acid monohydrate.

Note:

Verify the concentration of this citric acid solution by titrating 10 ml of the latter with a sodium hydroxide standard solution 0.1 N, using phenolphthalein as an indicator. If the solution is correct, the titre should be 28.55 ml.

5 APPARATUS

5. Rotary shaker: 35 – 40 turns per minute.

6 PREPARATION OF THE SAMPLE

6. The analysis is carried out on the product as received after carefully mixing the original sample to ensure it is homogeneous. See Method 1.

7 PROCEDURE

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Extraction

7.1 Weight to the nearest 0.001 g, 5 g of the prepared sample, and place it in a dry flask with a sufficiently wide neck, with a capacity of 600 ml, allowing the liquid to be shaken thoroughly. Add 500 ml \pm 1 ml of the citric acid solution (4.1) at 20 \pm 1°C. When adding the first mls of the reagent shake vigorously by hand to stop the formation of lumps and to prevent the substance sticking to

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the sides. Close the flask with a rubber stopper and shake it on the rotary shaker (5.1) for exactly 30 minutes at a temperature of $20 \pm 2^{\circ}\text{C}$.

Filter immediately through a dry fluted filter, into a dry glass receiver 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.

Determination

7.2 Determine the phosphorus according to Method 10 on an aliquot part of the clear filtrate.