

## SCHEDULE 2

### METHODS OF ANALYSIS

16.

#### *METHODS OF ANALYSIS AND TEST PROCEDURES FOR AMMONIUM NITRATE FERTILISERS CONTAINING MORE THAN 28% NITROGEN BY WEIGHT*

##### D. Determination of the pH Value

### 1 SCOPE AND FIELD OF APPLICATION

1. This method defines the procedure for measuring the pH value of a solution of a straight ammonium nitrate fertiliser containing more than 28% nitrogen by weight.

### 2 PRINCIPLE

2. Measurement of the pH of an ammonium nitrate solution by means of a pH meter.

### 3 REAGENTS

3. Distilled or demineralised water, free from carbon dioxide.

#### *Buffer solution. pH 6.88 at 20°C*

3.1 Dissolve  $3.40 \pm 0.01$  grams of potassium dihydrogen orthophosphate ( $\text{KH}_2\text{PO}_4$ ) in approximately 400 ml of water. Then dissolve  $3.55 \pm 0.01$  gram of disodium hydrogen orthophosphate ( $\text{Na}_2\text{HPO}_4$ ) in approximately 400 ml of water. Transfer the two solutions without loss into a 1,000 ml standard flask, make up to the mark and mix. Keep this solution in an airtight vessel.

#### *Buffer solution pH 4.00 at 20°C*

3.2 Dissolve  $10.21 \pm 0.01$  grams of potassium hydrogen phthalate ( $\text{KHC}_8\text{O}_4\text{H}_4$ ) in water, transfer without loss into a 1,000 ml standard flask, make up to the mark and mix.

Keep this solution in an airtight vessel.

3.3 Commercially available pH standard solutions may be used.

### 4 APPARATUS

4. pH meter, equipped with glass and calomel electrodes or equivalent, sensitivity 0.05 pH unit.

### 5 PROCEDURE

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#### *Calibration of the pH meter*

5.1 Calibrate the pH meter (4) at a temperature of  $20 (\pm 1)^\circ\text{C}$ , using the buffer solutions (3.1), (3.2) or (3.3). Pass a slow stream of nitrogen onto the surface of the solution and maintain this throughout the test.

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#### *Determination*

5.2 Pour 100.0 ml of water onto 10 ( $\pm 0.01$ ) grams of the sample in a 250 ml beaker. Remove the insolubles by filtering, decanting or centrifuging the liquid.

Measure the pH value of the clear solution at a temperature of 20 ( $\pm 1$ )°C according to the same procedure as for the calibration of the meter.

#### **6 EXPRESSION OF RESULTS**

6. Express the result in pH units, to the nearest 0.1 unit, and state the temperature used.