

Exercise no. 3

Determination of ammonia using the formaldehyde method

Dilute the analytical sample with distilled water in a measuring flask to the mark (100 mL) and mix completely.

Introduce 80 mL of distilled water into the conical flask using measuring cylinder. Then, add 5 mL of formalin (approx. 30% formaldehyde in water), 2-3 drops of 0.5% **phenolphthalein** indicator and neutralize the solution (which may contain formic acid) with 0.2 M NaOH till slightly red colour appears.

Pipette 10 mL of the analytical sample from 100 mL measuring flask and add to previously neutralized formalin solution. After 15 min. titrate with 0.02 M NaOH solution till **slightly red colour** appears. Repeat the titration to obtain three concordant results (not differing more than 0.2 mL). Calculate the amount of ammonia present in the sample using formula:

$$X = V \cdot C \cdot 17 \cdot 10$$

V – volume of NaOH solution,

C – concentration of NaOH solution,

17 – milliequivalent of NH_3 (mg/mmol).