

Effect of pH on distribution coefficient for Zn^{2+}

Teacher and technician sheet

This practical applies the analysis of zinc using zincon (see *Zinc by zincon assay*).

Equipment and materials

Each student or pair of students will require:

- Soil (0.1 g)
- Electronic balance
- Boiling tube x 2
- 5 cm³ pipette
- 1 cm³ pipette x 2
- -10 – 110°C thermometer
- Filter funnel and filter paper
- Narrow range pH indicator paper
- Zinc sulfate solution containing 0.01 g dm⁻³ Zn²⁺ (10 ppm), (10 cm³)
- Hydrochloric acid, 0.1 mol dm⁻³ (1.0 cm³)
- Sodium hydroxide solution, 0.1 mol dm⁻³ (1.0 cm³)
- Equipment and materials for zincon assay (see *Zinc by zincon assay*)

Make sure that students wear eye protection. 0.1 mol dm⁻³ sodium hydroxide solution is an irritant. Zinc sulfate-7-water, ZnSO₄.7H₂O is corrosive and harmful. Goggles are required for the preparation of the solution. Avoid inhalation of dust or spores from very dry soil/compost.

Solution preparation

Zinc sulfate solution: Weigh out 0.0439 g zinc sulfate-7-water, ZnSO₄.7H₂O, dissolve in deionised water and make up to 1 dm³.