PHYS-1 Making a standard solution

Apparatus (per group)

- 250cm^3 volumetric flask
- 250cm^3 beaker
- Weighing boat
- Spatula
- Funnel
- Dropping pipette
- Stirring rod
- Sticky labels or marker pens

Chemicals

- Potassium hydrogenphthalate, ~ 5g per group
- Distilled water

Follow-up experiment

- Simple titration

Making a standard solution

1. Using a weighing boat, weigh accurately (to 2 decimal places) approximately 5g of potassium hydrogenphthalate.
2. Transfer the potassium hydrogenphthalate to a 250cm^3 beaker. Wash the weighing boat with distilled water and collect the washings in the beaker.
3. Add approximately 100cm^3 of distilled water to the beaker.
4. Stir the mixture carefully until all the solid has dissolved.
5. Transfer the solution to a 250cm^3 volumetric flask.
6. Rinse the beaker and the stirrer with distilled water. Make sure that all the liquid goes into the flask.
7. Add distilled water to the flask until the liquid level is about 2cm below the graduation mark.
8. Stopper the flask and invert it several times to ensure thorough mixing.
9. Add more distilled water (use a dropping pipette) until the bottom of the meniscus is level with the graduation mark.
10. Stopper the flask and invert it several times to ensure thorough mixing. Label the flask.
11. Calculate the accurate concentration of potassium hydrogenphthalate in your solution (RMM = 204.22 $gmol^{-1}$).

You will use your standard solution to find the concentration of sodium hydroxide solution provided for you.

Experiment Hazard Assessment

Experiment: Preparing a standard solution
Reference: PHYS-1

Chemical hazards

Potassium hydrogenphthalate	Currently not classified as hazardous	CLEAPSS Hazcard 13B

Other hazards / precautions for teachers and technicians

None.