

# CHEMISTRY

## Lab 10: DISTILLATION

Distillation is a technique used to separate a mixture into its components using the difference in their boiling points. The mixture is boiled and the vapors are driven into a condenser and liquefied again. The distillate has a different mass composition from the initial mixture.

### PROCEDURE

1. Prepare a 100 cm<sup>3</sup> solution containing 70.0% ethanoic acid and 30.0% ethanol v/v (volume per volume)
2. Take 1.00 cm<sup>3</sup> of this, add 9.00 cm<sup>3</sup> of water and titrate the solution with NaOH 1.0 mol dm<sup>-3</sup>.
3. Distill 70.00 cm<sup>3</sup> of the solution until 50.00 cm<sup>3</sup> have been collected.
4. Titrate 1.00 cm<sup>3</sup> of the distillate as in step 2.
5. Boil the remaining distillate and stop the distillation when 40.00 cm<sup>3</sup> have been collected.
6. Titrate 1.00 cm<sup>3</sup> of the distillate as in step 2.
7. Boil the remaining distillate and stop the distillation when 30.00 cm<sup>3</sup> have been collected.
8. Titrate 1.00 cm<sup>3</sup> of the distillate as in step 2.

Calculate the percentage composition of each distillate.