Chem CP1b Distillation

Name _____ **Class** _____ **Date** _____

Your teacher may watch to see if you can:

- carry out experiments safely, reducing the risks from hazards.

Aim

To use **distillation** to produce pure water from ink.

Method

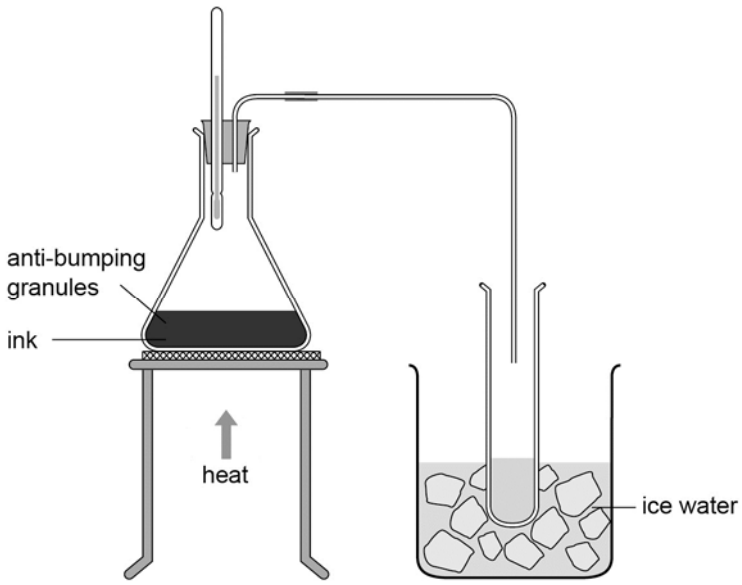
Apparatus

- eye protection
- conical flask
- delivery tube
- test tube
- ink
- Bunsen burner
- gauze
- 2-hole rubber bung with thermometer
- 250 cm^3 beaker
- ice
- tripod
- heat-resistant mat

⚠ Safety

Eye protection should be worn at all times.

Anti-bumping granules should be used to reduce the risk of the liquid boiling over.



A Set up your apparatus as shown in the diagram.

B Adjust the Bunsen burner so that you have a gentle blue flame.
The air hole should be about half open and the gas tap should be about half on.

C Heat the ink until it boils.

D Collect the distillate in the test tube and note the temperature of the vapour.

Planning and predicting

1 When you distil the ink, how will you know if you have successfully purified the water?

2 Predict the temperature reading on the thermometer when the ink is boiling. Explain your answer.

3 What is the purpose of the ice water shown in the diagram?

4 The conical flask might be knocked off the tripod.

a Why is the conical flask a hazard?

b How can the risk of harm from this hazard be reduced?

5 Suggest one other hazard and a way of reducing the risk from this hazard.

6 What air hole and gas settings should you have for the Bunsen burner:

a when you are not using it

b when you are using it to heat the ink?

Considering your results

7 Did you purify the water successfully? Explain your answer.

8 Explain what happened when the ink was distilled. In your explanation, use the following words:
boil, condenser, **evaporate**, liquid, steam, temperature, vapour.