

Chemguide – questions

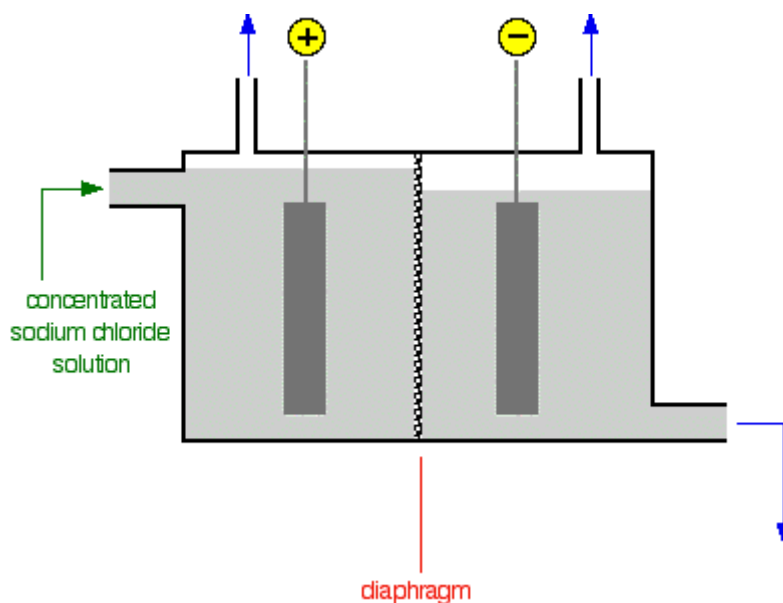
GROUP 7: MANUFACTURING CHLORINE

1. During the electrolysis of sodium chloride solution using inert electrodes:
 - a) Write the equation for the main anode reaction.
 - b) There is another product at the anode as well. What is it, and how is it formed?
 - c) Write the equation for the cathode reaction producing a gas.
 - d) There is another product at the cathode as well. What is it, and how is it formed?
 - e) Why is it necessary to keep the main gaseous products of the electrolysis apart?
 - f) Why is it necessary to keep the main gaseous product at the anode and the non-gaseous product at the cathode apart?

Do either question 2 or question 3 depending on whether you have learnt about the diaphragm cell or the membrane cell.

2. The diaphragm cell

This diagram is taken from the Chemguide page, with most of the labelling removed:



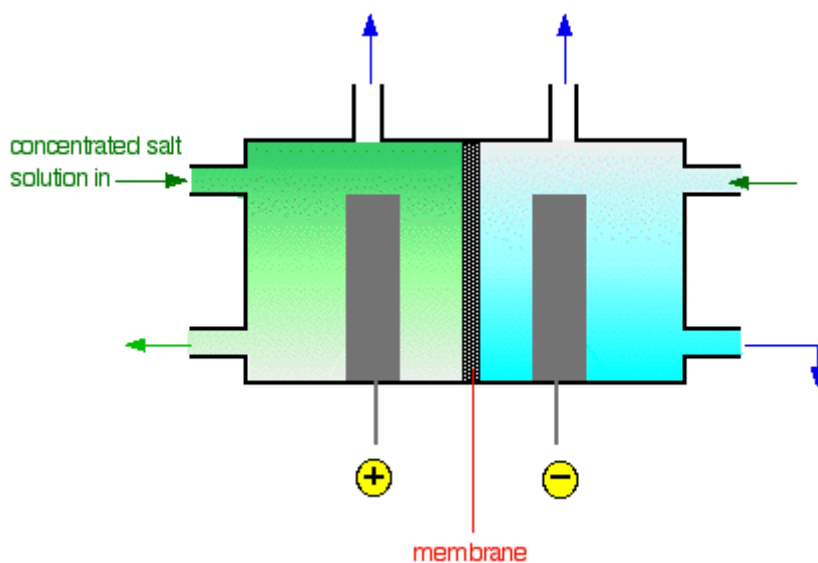
- a) What is the electrode material in the left-hand compartment?
- b) What gases are produced in the left-hand compartment?
- c) How are these gases separated?

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- d) What are the products in the right-hand compartment?
- e) What exactly comes out of the pipe in the bottom right-hand corner of the cell?
- f) Why is the liquid level in the left-hand compartment maintained at a higher level than the liquid on the right-hand side?

3. The membrane cell

This diagram is taken from the Chemguide page, with most of the labelling removed:



- a) What is the electrode material in the left-hand compartment?
- b) What gases are produced in the left-hand compartment?
- c) How are these gases separated?
- d) What is the function of the membrane? Explain why this is important.
- e) What are the products in the right-hand compartment?
- f) What is fed into the right-hand compartment in the tube shown by the green arrow?
- g) What exactly comes out of the pipe in the bottom right-hand corner of the cell?
- h) What leaves the cell through the pipe in the bottom left?