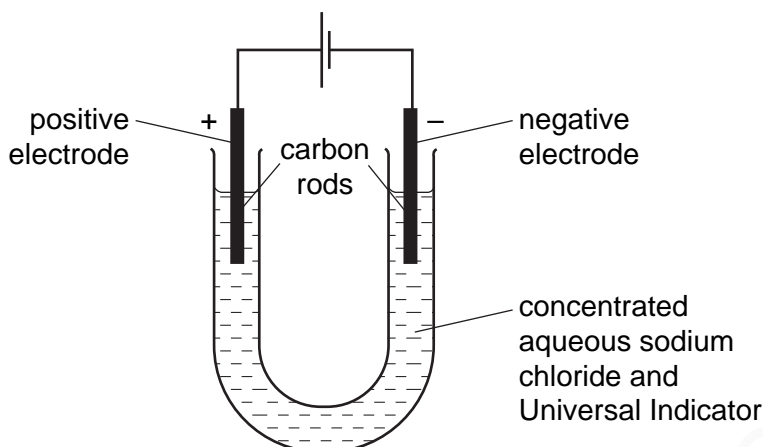


ELECTROLYSIS-CONCENTRATED LEAD BROMIDE

1

Electricity was passed through a concentrated solution of sodium chloride containing Universal Indicator.



(a) Suggest a suitable material for the electrodes.

..... [1]

Three observations were noted:

- 1 Bubbles of gas seen immediately at the negative electrode.
- 2 Bubbles of gas formed after some time at the positive electrode.
- 3 The solution turned blue around the negative electrode and colourless near the positive electrode.

(b) Give a test to show that the gas observed in 1 is hydrogen.

test

result [2]

(c) Suggest why bubbles of gas were not seen immediately in 2.

.....
..... [1]

(d) What causes the colour change in 3 at

the negative electrode,

the positive electrode? [2]

[Total: 6]

MARKING SCHEME

(a) carbon/graphite/any unreactive metal e.g. platinum/nickel [1]

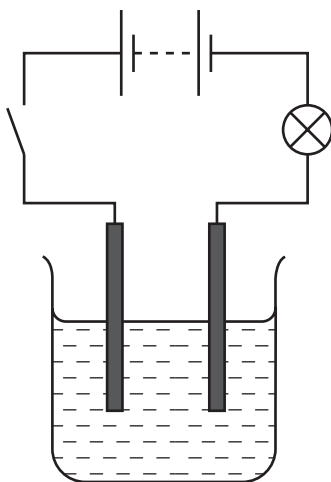
(b) lighted splint (1) pops (1) [2]

(c) gas dissolves (in the solution) o.w.t.t.e [1]

(d) alkali/(sodium) hydroxide (1)
chlorine/bleach (1) not chloride or chlorine ions [2]

[Total: 6]

- 2** The diagram shows the apparatus used to find out the effect of an electric current on a concentrated aqueous solution of sodium chloride.



(a) On the diagram label the electrodes [1]

(b) Give three observations when the circuit is switched on.

- 1
2
3 [3]

(c) (i) Name the product at the positive electrode (anode).

..... [1]

(ii) State a test for this product and the result of the test.

test

result [2]

MARKING SCHEME

- (a) electrodes correctly labelled on rods (1) [1]
- (b) bubbles at positive electrode (1), bubbles at negative electrode (1)
bulb lights up/smells of bleach/greenish gas (1) [3]
- (c) (i) chlorine (1) [1]
- (ii) litmus/indicator (1) bleached/colourless (1) [2]