

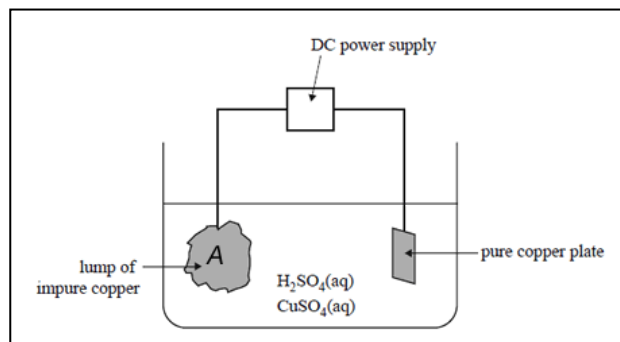
Friday Worksheet

Name:

Electrolysis worksheet 2

1) An electrolytic process known as electrorefining is the final stage in producing highly purified copper. In a small-scale trial, a lump of impure copper is used as one electrode and a small plate of pure copper is used as the other electrode. The electrolyte is a mixture of aqueous sulfuric acid and copper sulfate.

- a) Samples of copper mined typically contain impurities such as silver, gold, cobalt, nickel and zinc. Cobalt, nickel and zinc are oxidised from the copper lump and exist as ions in the electrolyte. Silver and gold are not oxidised and form part of an insoluble sludge at the base of the cell. Why should silver and gold never be present as cations in the electrolyte?



2) An electrolytic cell was set up using an unknown, molten metal salt, XBr_2 . The apparatus was set up as shown on the right.

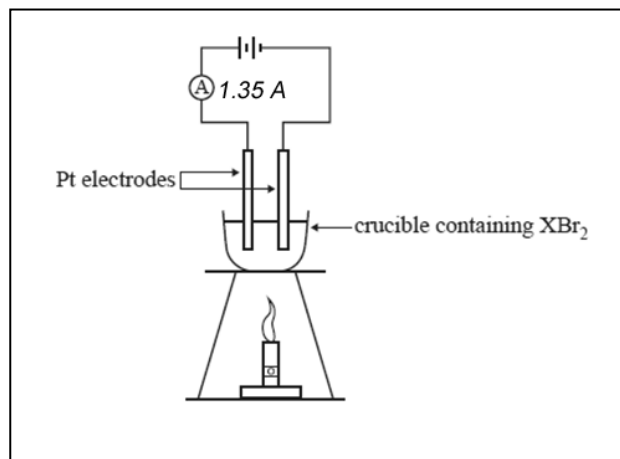
- a) A current of 1.35 Amperes was applied for 29.0 minutes and 0.772 g of metal X was produced.

a. Write a balanced half-equation for the anode and cathode reactions in this electrolytic cell.

Anode _____

Cathode _____

b. Identify metal X deposited on the electrode



3) Describe two differences between:

i. a fuel cell, and an electrolytic cell,

Fuel cell	Electrolytic cell

ii. a galvanic cell and a fuel cell,

Fuel cell	Galvanic cell