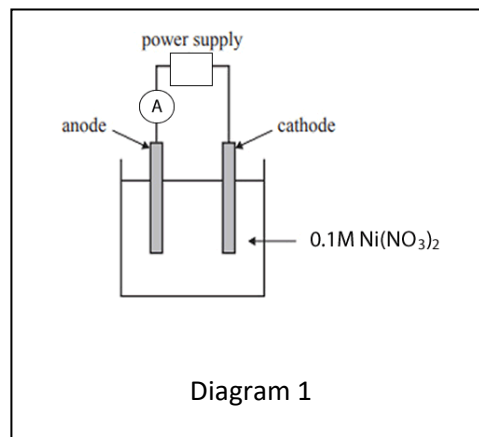


Revision –electroplating.

1. A student was asked to experimentally determine Faraday's constant (F) using the electrolytic cell shown in diagram 1. The following items was on the list of material asked for.

- ammeter
- one copper and one nickel strips of metal.
- 0.1 M $\text{Ni}(\text{NO}_3)_2$.
- 1 X 200 mL beaker
- 12 V power pack
- stopwatch



- a. Complete the labelling of diagram 1 by clearly indicating the:
- i. polarity of each electrode
 - ii. substance that each electrode is made of
 - iii. direction of electron flow
 - iv. direction of cation flow
 - v. write the half equations for the reactions taking place at the
anode _____
cathode _____
- b. Offer a valid method, in dot point form, that the student could follow to achieve the aim of the experiment.
- c. A current of 1.10 A was applied for 6.00 minutes in order to deposit 0.121 grams of nickel. Using this data calculate Faraday's constant. Give the answer to the right number of significant figures and show all working out.
- d. Calculate the charge in, Coulombs, of one electron using the information derived from this experiment.