

儀器設定:

Anode: platinum wire

Cathode: platinum gauze electrode

結果:

(1) Calculate and report weight percent copper in your sample.

unknown no.	weight of Cu ore(g)	weight of platinum gauze(g)	weight of platinum gauze with Cu(g)	weight percent copper(%)
520	0.1220	7.7514	7.7588	6.066

(2) How much copper ore which contains 10% Cu should one take to guarantee that at least 100 mg of Cu will be plated out on the platinum cathode?

$$a \times 10\% = 100 \text{ mg}$$

$$a = 1000 \text{ mg} = 1 \text{ g}$$

(3) Assuming a constant current of 1.8 ampere during the electrolysis, how long will it take to plate out 250 mg of Cu?

$$\frac{Wt}{MW} = \frac{Q=I \times t}{n \times 96485}$$

$$\frac{0.250}{63.5} = \frac{1.8 \times t}{2 \times 96485} \quad t = 422.069 \text{ sec}$$

(4) Calculate the percent copper in a sample that weighs 2.856 g and yields 0.1428 g copper upon electrolysis.

$$\frac{0.1428}{2.856} \times 100\% = 5\%$$

(5) Write the electrode reactions that occur at the **cathode** if no nitrate is present.

