

Electrolysis

Chapter 6: Electrolysis · Topic 1

Key Concept

Electrolysis involves passing electric current through an electrolyte, causing cations to move to the cathode and anions to move to the anode.

During electrolysis, reduction occurs at the cathode (gain of electrons) and oxidation occurs at the anode (loss of electrons).

Faraday's laws of electrolysis relate the amount of substance deposited or liberated to the quantity of electric charge passed through the electrolyte.

Electrolysis has practical applications in electroplating (coating metals), extraction of reactive metals, and purification of metals like copper.

Quick Revision Notes

- Electrolysis: electric current causes decomposition.
- Cations move to cathode; anions move to anode.
- Reduction (gain electrons) occurs at cathode.
- Oxidation (loss electrons) occurs at anode.
- Faraday's laws relate charge to substance deposited.
- Applications: electroplating.
- Also used for reactive metal extraction.
- Also used for metal purification (like copper).

Practice Questions

- 1 Diagram the electrolysis of a molten salt showing cathode and anode reactions.
- 2 Explain what happens during electroplating.
- 3 Discuss Faraday's laws of electrolysis.
- 4 Research how copper is purified using electrolysis.
- 5 Discuss the extraction of a reactive metal via electrolysis.
- 6 Explain oxidation and reduction in electrolysis.