Electrolysis Basics

Electrolysis: Non-spontaneous reaction converting electrical energy into chemical

Electrode Charges

Anode: Positive (+)

Cathode: Negative (-)

- Anode still oxidides
- Cathode still reduces

Faraday's Law

1st Electrolysis Law

- Amount of substance made/used is directly proportional to electrical charge through cell

2nd Electrolysis Law

- To make 1 mole of a substance, electrons must be consumed (dependent on substance's charge)

Electrolytes

Aqueous Solution	Molten Electrolyte
Assume H_2O is also present	Pure substance
H_2O may 'interfere' with reaction	No H_2O present

Electrochemical Series

- Strongest oxidant at cathode reacts with strongest reductant at anode
- Unwanted reactions may occur if other substances are present

Shape

- 'Z' - shaped on series
- Flatter 'Z' for stronger reaction

Associated Formulas

Electrical Charge Formula

$Q = I \times t$

Mole No. Of Electrons Formula

$n(e^-) = Q \div F$

Mole Ratio

Unknown ÷ Known

Molar Formula

$n = m \div M_r$