5.5 Chemical Changes

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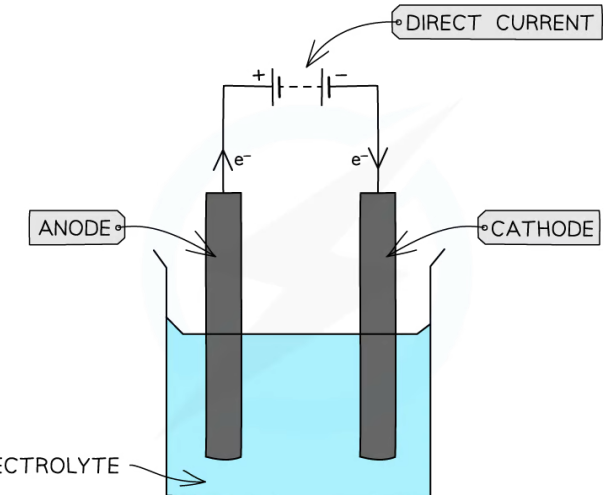
5.4.3 Electrolysis

Using Electrolysis to Extract Metals

Required Practical 9 Electrolysis



5.4.1 Reactivity of Metals

Please	K
Send	Na
Little	Li
Charlie's	Ca
Monkeys	Mg
And	Al
Crazy	C
Zebras	Zn
In	Fe
Hard	H
Lead	Pb
Cages	Cu
Securely	Ag
Guarded	Au

REDUX Reactions (OILRIG)

Metal reactions

Metal + oxygen→ metal oxide

Metal + water → metal hydroxide + hydrogen

Metal + acid → salt + hydrogen

Metal oxide + acid → salt + water

Metal carbonate + acid → salt + carbon dioxide + water

Salts rule:
Hydrochloric acid = chloride salt
Nitric acid = nitrate salt
Sulfuric acid = sulfate salt

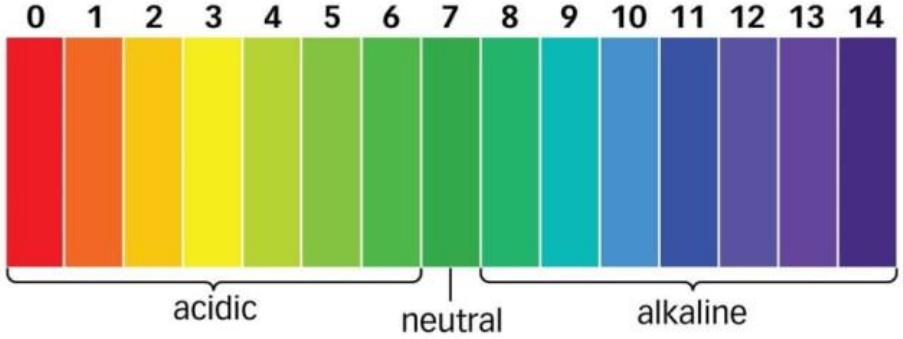
REDUCTION AT THE CATHODE:
GENERAL EQUATION: $X^+ + e^- \longrightarrow X$
EXAMPLE: $2H^+ + 2e^- \longrightarrow H_2$

OXIDATION AT THE ANODE:
GENERAL EQUATION: $X^- \longrightarrow X + e^-$
EXAMPLE: $2Cl^- \longrightarrow Cl_2 + 2e^-$

Required Practical 8 Preparing Pure Dry Sample of Soluble Salt

5.4.2 Reactions of Acids

$$H^+(aq) + OH^-(aq) \longrightarrow H_2O(l)$$



Key Words

Reactivity	Metal oxide	Dilute
REDUX	Displacement	Concentrated
Oxidation	Ionic equation	Acid
Reduction	Metal hydroxide	Allkali
Anode	Metal oxide	Electrolyte
Cathode	Metal carbonate	Electrolysis
Half equation	Base	Aluminium oxide
Electron	Nitric	Cryolite
Ion	Hydrochloric	
Aqueous	Sulfuric	