

IGCSE
CHEMISTRY
DEFINITION

- 0620 -

BY MR KHING



Chemical Tests:

Indicators	Acid	Neutral	Alkali
Litmus Paper	Red	No Change	Blue
Universal Indicator	Red	Green	Purple
Methyl Orange	Red	Orange	Yellow
Phenolphthalein	Colourless	Colourless	Pink

Tests for Gases:

Ammonia	<ul style="list-style-type: none"> • Damp litmus paper <ul style="list-style-type: none"> ○ Red to blue
Carbon Dioxide	<ul style="list-style-type: none"> • Limewater <ul style="list-style-type: none"> ○ Cloudy
Chlorine	<ul style="list-style-type: none"> • Damp litmus paper <ul style="list-style-type: none"> ○ Bleached
Hydrogen	<ul style="list-style-type: none"> • Lighted wooden splinter <ul style="list-style-type: none"> ○ 'Pop' sound is produced
Oxygen	<ul style="list-style-type: none"> • Glowing wooden splinter <ul style="list-style-type: none"> ○ Relight
Sulfur Dioxide	<ul style="list-style-type: none"> • Acidified potassium manganate (VII) solution <ul style="list-style-type: none"> ○ Purple to colourless
Alkene	<ul style="list-style-type: none"> • Bromine water <ul style="list-style-type: none"> ○ Orange to colourless



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Basic oxide

- **Metal oxide**
- $K_2O, Na_2O, CaO, MgO, CuO$

Acidic oxide

- **Non-metal oxide**
- SO_2, CO_2, NO, NO_2

Amphoteric oxide

- Show both properties of acid and alkali
- Can react with both acid and alkali
- Al_2O_3, ZnO, PbO

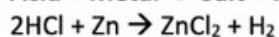
Neutral oxide

- Cannot react with both acid and alkali
- CO, H_2O



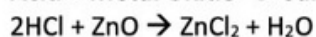
Chemical Reactions:

Acid + Metal \rightarrow Salt + Hydrogen Gas

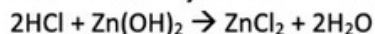


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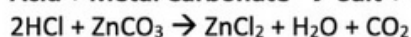
Acid + Metal Oxide \rightarrow Salt + Water



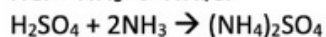
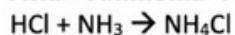
Acid + Metal Hydroxide \rightarrow Salt + Water



Acid + Metal Carbonate \rightarrow Salt + Water + Carbon Dioxide



Acid + Ammonia \rightarrow Ammonium Salt



Alkali + Ammonium Salt \rightarrow Salt + Water + Ammonia



Observation when $O_2/CO_2/H_2/NH_3$ is formed:

- Colourless gas bubbles formed
- Effervescence



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Solvent

The liquid in which the solute dissolves to form a solution.

Saturated Solution

No more solute can be dissolved at that given temperature

Atomic number/Proton number

The total number of protons in an atom

Mass number/Nucleon number

The sum of the protons and neutrons in the nucleus

Isotope

Atoms of the same element with the same number of proton but different number of neutrons

Atom

Elements are made up of atoms, which contain protons, neutrons and electrons

Nucleus

The centre of the atom which contains protons and neutrons

Element

Made of only one type of atom and cannot be broken down anymore

Compound

Made of two or more different atoms chemically joined together

Mixture

Made of two or more different components which are not chemically joined together

Group

The columns in the Periodic Table. The Group Number equals the number of electrons in the outer shell

Period

The rows of the Periodic Table. The Period Number equals the number of shells used by the electrons of the atom.

Ionic Bonding

The electrostatic forces of attractions formed by ions of opposite charges

Covalent Bonding

Two or more atoms join together by sharing a pair of electrons

Ion

A charged particle. The number of electrons are not equal to the number of protons.



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