

CHEMICAL FORMULAE & EQUATIONS

Valency The number of electrons lost, gained or shared by an atom.

Chemical formula The formula that represents the number & type of the atoms in a molecule.

Atomic groups A set of atoms joined together that behave like one atom during a chemical reaction and they have their own valency & can't exist solely.

Chemical equations A set of symbols and chemical formulae, representing the reactants, products and the conditions of the reaction as well.

Reactants The starting materials in a chemical reaction.

Products The substances formed from a chemical reaction.

Valence shell Outermost shell.

Valence electron Electrons of the outermost shell (group number).

Period number Number of shells.

1) **GROUP NUMBERS: I II III IV V VI VII VIII.**

2) **Noble gases have zero valency (no gaining, losing or sharing electrons).**

3) **Prefix: Tells you how many atoms of each element in a formula.**

1. Mono- 2. Di- 3. Tri- 4. Tetra- 5. Penta- 6. Hexa- 7. Hepta- 8. Octa- 9. Nona- 10. Deca-

4) **Non-metal ions take the suffix (ide).**

Chloride / Nitride / Oxide.

5) **Methane → CH₄.**

6) **Zinc has a valency of 2.**

ATOMIC GROUPS

ATOMIC GROUP	SYMBOL	CHARGE	VALENCY
Hydroxide	OH	-ve	1
Hydrogen carbonate	HCO ₃	-ve	1
Nitrite	NO ₂	-ve	1
Nitrate	NO ₃	-ve	1
Ammonium	NH ₄	+ve	2
Carbonate	CO ₃	-ve	2
Sulfate	SO ₄	-ve	2
Sulfite	SO ₃	-ve	2
Phosphate	PO ₄	-ve	3
Phosphite	PO ₃	-ve	3

MOLES

Moles A unit of measurement used in chemistry to express the amounts of a chemical substance.

Moles The quantity of a substance that contains 6×10^{23} .

Moles The number of particles which is equal to the number of atoms in 12g Carbon.

Moles The mass in grams which contains the **Avogadro's constant** number of particles.

Avogadro's constant The number of particles in one mole of a substance.

Relative atomic mass The average mass of the isotopes of elements.

Relative molecular mass The sum of atomic masses of the elements in a compound.



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Not published yet.

Last updated 2nd December, 2023.

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