

CHEMISTRY CHEATSHEET

Basic Concepts

- **Atom:** the basic unit of matter, consisting of a nucleus (protons and neutrons) surrounded by electrons.
- **Molecule:** a group of two or more atoms held together by chemical bonds.
- **Element:** a substance composed of only one type of atom.
- **Compound:** a substance composed of two or more elements chemically combined in a fixed ratio.
- **Ion:** an atom or molecule with a net electric charge due to the loss or gain of one or more electrons.

Chemical Bonds

- **Ionic Bond:** a bond formed by the transfer of electrons between atoms.
- **Covalent Bond:** a bond formed by the sharing of electrons between atoms.
- **Hydrogen Bond:** a weak bond between two molecules resulting from an electrostatic attraction between a proton in one molecule and an electronegative atom in the other.

Chemical Reactions

- **Reactant:** a substance that takes part in and undergoes change in a chemical reaction.
- **Product:** a substance produced as a result of a chemical reaction.
- **Chemical Equation:** a symbolic representation of a chemical reaction showing the reactants and products.
- **Stoichiometry:** the calculation of the quantities of reactants and products involved in a chemical reaction.

States of Matter

- **Solid:** a state of matter characterized by a fixed shape and volume.
- **Liquid:** a state of matter characterized by a fixed volume but not a fixed shape.
- **Gas:** a state of matter characterized by neither a fixed shape nor a fixed volume.
- **Plasma:** a high-temperature physical state of matter in which atoms lose most of their electrons.

Acids and Bases

- **Acid:** a substance that donates hydrogen ions (H^+) to a solution.
- **Base:** a substance that accepts hydrogen ions (H^+) or donates hydroxide ions (OH^-) to a solution.
- **pH:** a measure of the acidity or basicity of a solution.

Resources

- [Khan Academy - Chemistry](#)
- [Chemguide - The Periodic Table](#)
- [Royal Society of Chemistry](#)