

Periodic Table

Major Region	Special Division	Physical Properties	Chemical Properties
Metals	General	<ul style="list-style-type: none"> ○ Metallic luster ○ Conducts heat and electricity ○ Malleable 	<ul style="list-style-type: none"> ○ Corrode in air (rust) ○ Form several oxidation states
	Alkali Metals (<i>Column 1</i>)	<ul style="list-style-type: none"> ○ Soft ○ Low melting points ○ Low densities 	<ul style="list-style-type: none"> ○ Explodes in water ○ Tarnish rapidly in air
	Alkaline Earth Metals (<i>Column 2</i>)	<ul style="list-style-type: none"> ○ Soft 	<ul style="list-style-type: none"> ○ React well with hot water ○ Strong reducing agents
	Transition Metals	<ul style="list-style-type: none"> ○ High density ○ High melting point ○ magnetic 	<ul style="list-style-type: none"> ○ form complex ions
	Lanthanides (<i>Row of La - Lu</i>)		<ul style="list-style-type: none"> ○ as reactive as Calcium ○ occur in nature as oxides (bonded o oxygen)
	Actinides (<i>Row of Ac - Lr</i>)		<ul style="list-style-type: none"> ○ multiple oxidation states ○ radioactive
Metalloids	B, Si, Ge, As, Sb, and Te	<ul style="list-style-type: none"> ○ semi-conductor 	<ul style="list-style-type: none"> ○ act like metals when they react with non-metals ○ act like non-metals when they react with metals
Non-Metals	General	<ul style="list-style-type: none"> ○ not metallic ○ not conducting 	<ul style="list-style-type: none"> ○ Forms negative ions
	Halogens (<i>Column 7 F - I</i>)	<ul style="list-style-type: none"> ○ increase in density as you go down the column ○ colored (yellow-green to brown to black) 	<ul style="list-style-type: none"> ○ Form negative ions ○ Form salts with elements from alkaline metals ○ Exist as diatomic molecules ○ Form acids with hydrogen
	Noble Gases (<i>Column 8 He - Rn</i>)	<ul style="list-style-type: none"> ○ Colorless ○ Odorless ○ Tasteless 	<ul style="list-style-type: none"> ○ chemically inert (do not react)
	Hydrogen	<ul style="list-style-type: none"> ○ Colorless ○ Tasteless ○ Odorless 	<ul style="list-style-type: none"> ○ Inflammable ○ Reacts with many elements ○ Exists as diatomic molecule

Diatomic Gases:

These elements exist naturally as diatomic molecules – Memorize them.

H₂, N₂, F₂, O₂, I₂, Cl₂, Br₂

Important Points

- Periodic table is organized by atomic number (number of protons)
- No two elements have the same atomic number
- Originally the periodic table was organized by atomic mass. This was done by Dimitri Mendeleev. Later, Henry Mosely reorganized the periodic table based on atomic number
- Periodic table is also organized according to physical and chemical properties.
- Elements in the same row are in the same period
- Elements in the same column are in the same family or group.