

### PROPERTIES COMMON IN ALL METALS

- \$ Solid.
- \$ Shiny (metallic luster).
- \$ Silver.
- \$ Malleable & ductile --> layers of +ve ions can slide over each other.
- \$ Good conductor of electricity (free moving electrons).

### GROUP I

AKA Alkali metals.

#### PHYSICAL PROPERTIES

- \$ Soft.
- \$ Low melting point (*Decreases down the group*).
- \$ Low density (*Increases down the group*).
- \$ All their compounds are soluble in water.

#### CHEMICAL PROPERTIES

- \$ Monovalent (one oxidation state).
- \$ Lose 1 electron & form a +ve ion.
- \$ Very reactive (*Increases down the group*).
- "They're preserved in paraffin or Kerosene".
- \$ No catalytic properties.
- \$ Their compounds are white when solid & colorless when aqueous.
- \$ React with cold water forming an alkali (soluble metal hydroxide).  
" $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$ ."
- \$ React with Oxygen forming a metal oxide.  
" $4\text{Li} + \text{O}_2 \rightarrow 2\text{Li}_2\text{O}$ ."
- \$ Their compounds never undergo thermal decomposition except group 1 nitrate.  
" $2\text{NaNO}_3 \rightarrow 2\text{NaNO}_2 + \text{O}_2$ ."

~ Lithium has the highest melting point, the lowest density and the lowest reactivity.

~ Cesium is the most reactive in this group.



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