

The Periodic Table of the Elements

140 Ce Cerium 58	141 Pr Praseodymium 59	144 Nd Neodymium 60	Pm Promethium 61	150 Sm Samarium 62	152 Eu Europium 63	157 Gd Gadolinium 64	159 Tb Terbium 65	162 Dy Dysprosium 66	165 Ho Holmium 67	167 Er Erbium 68	169 Tm Thulium 69	173 Yb Ytterbium 70	175 Lu Lutetium 71
232 Th Thorium 90	Pa Protactinium 91	238 U Uranium 92	Np Neptunium 93	Pu Plutonium 94	Am Americium 95	Cm Curium 96	Bk Berkelium 97	Cf Californium 98	Es Einsteinium 99	Fm Fermium 100	Md Mendelevium 101	No Nobelium 102	Lr Lawrencium 103

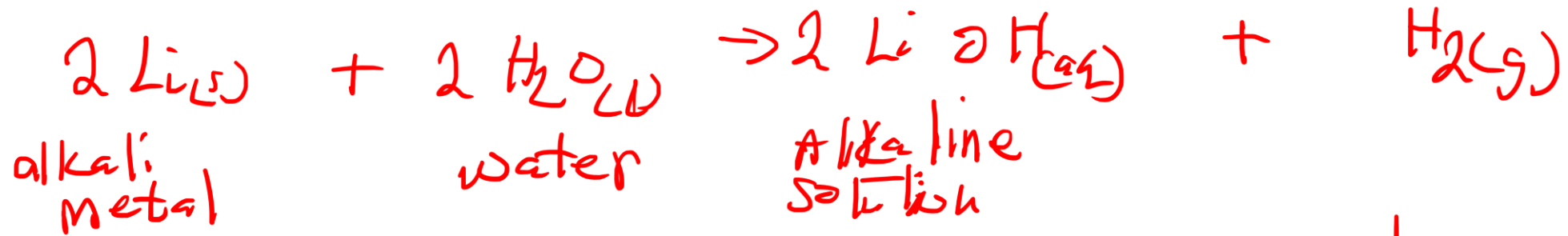
Key

$\overset{a}{\underset{b}{X}}$

 a = relative atomic mass
 X = atomic symbol
 b = proton (atomic) number

Alkali Metals / Group I Elements

→ They are called alkali metals because they react with water to form an alkaline solution



② Occurrence of alkali metals
→ occur as compounds because they are very reactive alkali metals

③ Flame of alkali metals
→ Lithium — red flame
→ Sodium — yellow / orange flame
→ Potassium — lilac / pinkish flame

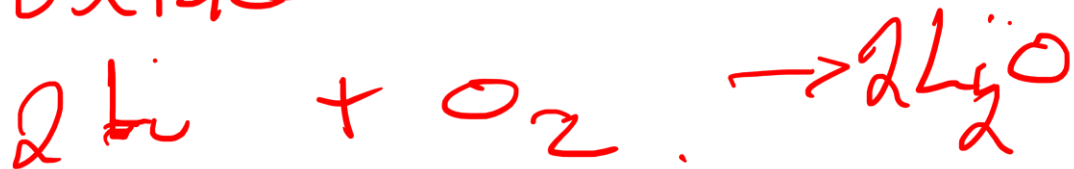
storage of alkali metals
→ stored under oil to avoid reacting with air and water

Physical Properties of alkali metals

1. Soft metals to cut
 2. Good conductors of electricity and heat
 3. Low melting and boiling points
- Trend in a group — melting points decrease as you go down the group
- Trend of density — density decreases as you go down the group

Chemical properties of alkali metals

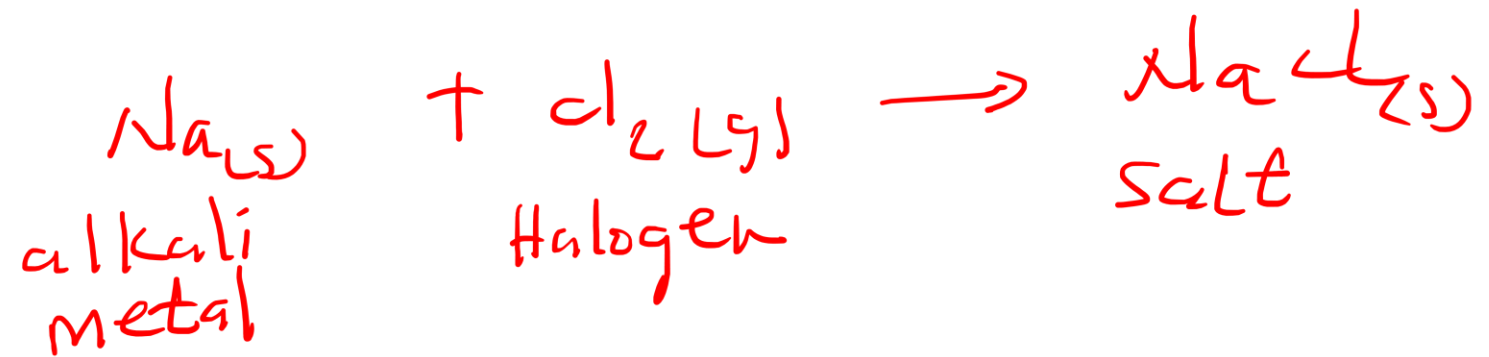
1. Have one electron in outer most shell which they lose during a reaction
2. They are reducing agents because they lose electrons
3. React with oxygen to form basic oxides



4. React with water to form a hydroxide and hydrogen gas



5. React with group VII elements to form salts



→ Reaction of alkali metals increases down the group because the outermost electron is far from the nucleus of the atom for elements with larger atomic number in the group