

# Group 1 - Alkali Metals

21 November 2019 10:58

Called Alkali metals.

Li  
Na  
K  
Rb  
Cs  
Fr



more reactive



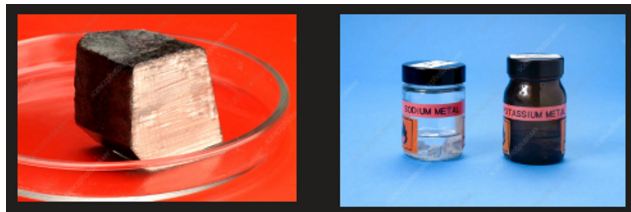
which is because Fr's outer e<sup>-</sup> is a long way from the positive nucleus so more easily lost.

Also lower melting & boiling point as you go down.

Group one metals are so reactive they have to be stored in oil.

You can see the lithium clearly.

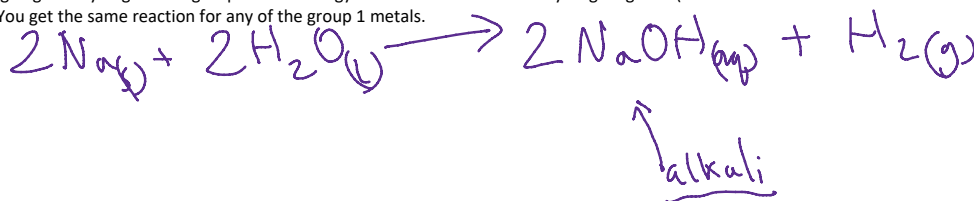
If you take Li out you can cut it easily. The new surface is shiny - like all metals - but only for a short while since it quickly reacts with oxygen (ie oxides) and loses its shine.



They form IONIC compounds with Non - metals. You need to know about three reactions specifically

## 1) Reactions with Water.

Alkali metals have fantastic reactions with water. Check out youtube for demos. You need to be able to describe. If you add Li, Na or K all react violently with water - fizzing and whizzing around, releasing hydrogen gas. As you go down group 1 more energy is released so with K the hydrogen ignites (catches fire) You get the same reaction for any of the group 1 metals.



## 2) Reactions with Chlorine.

Chlorine is a group 7 gas - and like all gases goes around in pairs. (Cl<sub>2</sub>) You have to add the chlorine gas to the metal and heat. You get a WHITE SALT which are METAL CHLORIDES



NaCl is table salt.  
(Yum Yum)  
There are many salts though as you use different

“ ”

salts though as  
you use different  
metals with  
Chlorine

### 3) Reactions with Oxygen.

Group 1 reacts with oxygen to form - metal oxides. Again, oxygen, being a gas, goes around with a friend to make a pair.

Sadly there are several reactions:

$\text{Li} \rightarrow \text{Li}_2\text{O}$  Lithium oxide

$\text{Na} \rightarrow \text{Na}_2\text{O}$  sodium oxide and  $\text{Na}_2\text{O}_2$  - sodium peroxide

$\text{K} \rightarrow$  potassium peroxide  $\text{K}_2\text{O}_2$  and potassium superoxide  
 $\text{KO}_2$