

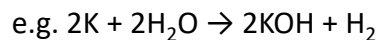
- Ceramics have many uses which can be linked to their properties.



8) Group 1 – Alkali Metals

- Have normal metal properties (e.g. good conductors) except
- They are soft silvery white metals
- Have lower melting points compared to other metals.
- Less dense so float on water.

- React with cold water to produce an alkaline solution and fizz to produce hydrogen gas:
- Lithium – fizzes on the surface
- Sodium – more reactive, fizzes and melts into a ball
- Potassium – even more reactive, sets on fire (a lilac flame)



- React with oxygen to form oxides (which is why the alkali metals are shiny on the inside but dull on the outside).
- As you go down group 1 the metals get more reactive.

9) Group 7 – The Halogens

- The halogens are a group of coloured non-metals whose melting points increase down the group (since the molecules get bigger down the group)
- fluorine (F_2) is a pale-yellow gas,
- chlorine (Cl_2) is a green gas,
- bromine (Br_2) is a red-brown liquid,
- iodine (I_2) is a dark grey solid.

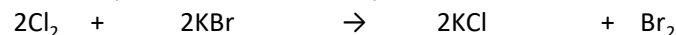
- Halogens react with metals to make metal halides.
- Halogens react with non-metals by sharing electrons e.g. with hydrogen

fluorine + hydrogen \rightarrow hydrogen fluoride



- Halogens become less reactive as you go down the group.
- Halogens react with solutions of their ions to give “displacement reactions”. A more reactive halogen will displace a less reactive halogen from one of its compounds, but the reaction does not work the other way round.

chlorine + potassium bromide \rightarrow potassium chloride + bromine



10) Group 0 – The Noble Gases

- Noble gases are unreactive.
- This is because their atoms have full outer shell of electrons.
- The boiling points and densities of the noble gases increase down the group.
- Because they are unreactive, this explains the uses of the noble gases e.g. argon is used in welding to stop the hot metal reacting with oxygen in the air.