

# Group 7 Halogens

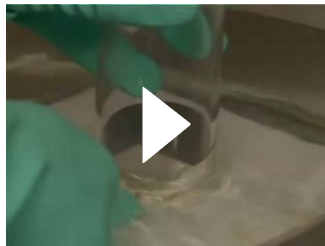
21 November 2019 11:30

F  
Cl  
Br  
I  
At

These are the **HALOGENS** - they are non metals  
They are **LESS** reactive as you go down the group  
Higher melting points and boiling points.

They all have 7 electrons in their out shell and like to form -1 ions by gaining 1 more electron to fill that outer shell

At room temperature fluorine is very nasty gas, chlorine gas is just nasty.  
Bromine is a poisonous red brown liquid and Iodine is dark grey crystal or a purple vapour.



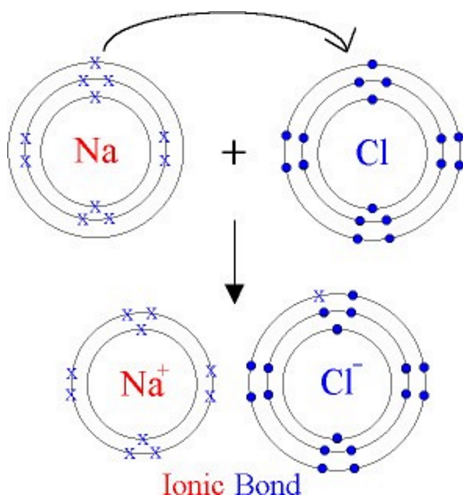
This video shows some of the reactions of the Halogens. Its good fun, but a little bit more complex that you need at the end.  
[Comparing the four halogens - Chemical elements: properties and reactions \(2/8\)](#)

<https://www.youtube.com/watch?v=u2ogMUDBaf4>

All Halogens form diatomic molecules - ie go around in pairs - doesn't matter if its a solid or a gas. Pairs.  
Eg I<sub>2</sub>, F<sub>2</sub> etc They can form both COVALENT and IONIC bonds.

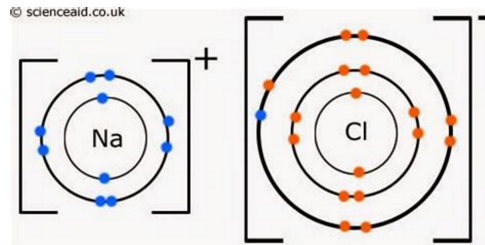
Halogens form COVALENT bonds (where they share electrons to get full outer shells with other NON METALS eg hydrogen or oxygen. These reactions all make simple molecular structures where they SHARE electrons.

Halogens form IONIC bonds with metals - ie they gain an electron from the metal so that both the metal and the halogen have full outer shells.



See how the Na donates 1 electron to the Cl so both have full shells

We therefore get Na<sup>+</sup> and Cl<sup>-</sup> which attract each other strongly forming an ionic bond



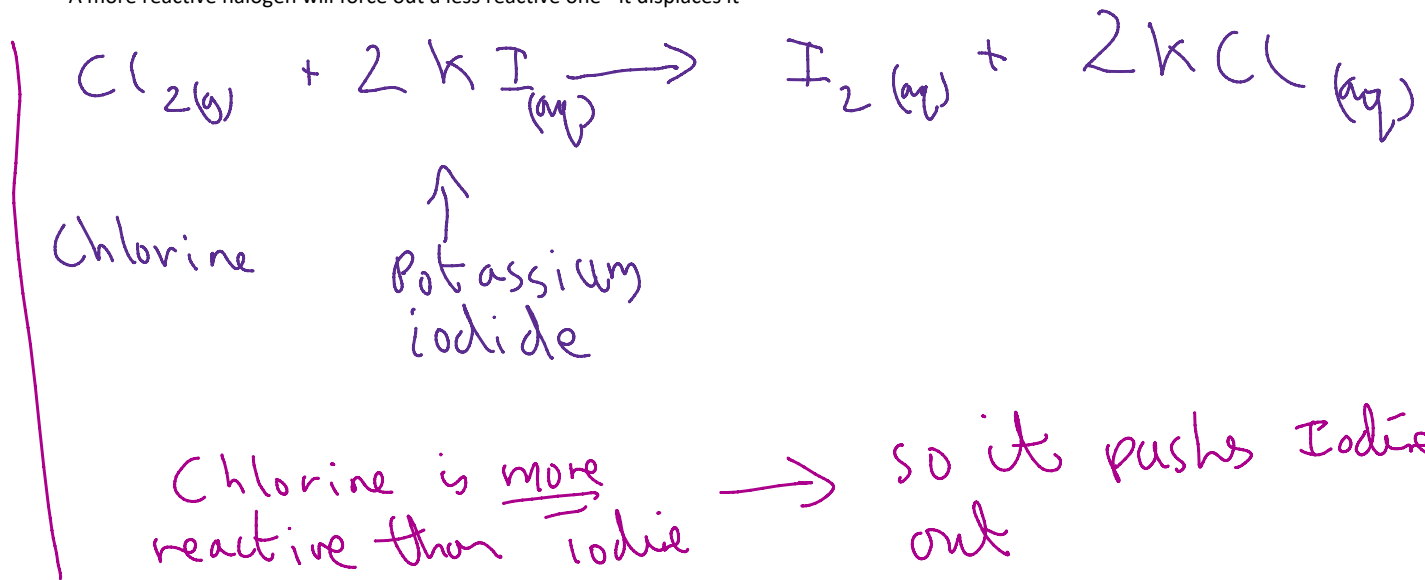
## Displacement Reactions

A more reactive halogen will force out a less reactive one - it displaces it



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What if we did it the other way around?

