Group VII (halogens)

Prepared by Soofia Anwer

9 F fluorine 19
17 Cl chlorine 35.5
35 Br bromine 80
53 I iodine 127
85 At astatine –
117 Ts tennessine –

Halogens are diatomic molecule(two atoms covalently bonded to form molecule)

Reactivity: Reactivity decreases down the group.
Reason: Number of shells increases as we go down the group, so size of an atom increases (force of attraction between nucleus to valence electron decreases)so more difficult for nucleus to attract valence electron)

Physical properties trends:
1. They have low melting and boiling points(Melting and Boiling point increases as we go down the group.
2. The density increases down the group.
3. The colours becomes darker as go down the group.

Appearance of halogens

	Appearance at room temperature	Appearance in solution
Fluorine	Pale yellow gas	Pale yellow
Chlorine	Green gas/Yellow-green gas	Pale green
Bromine	Red-brown liquid	orange
Iodine	Grey-black solid	brown

- Iodine vapors are purple

Chemical properties of halogens: Halogens are most reactive nonmetals because they need only one electron to acheive noble gas configuration(filled outer shell electrons)

1. Halogens reacts with most metals to form salts called halides.
2. A more reactive halogen will displace a less reactive halogen from its halide solution.This reaction is called **displacement reaction**.

halogen	halide		
	potassium chloride	potassium bromide	potassium iodide
chlorine	x	turns orange	turns brown
bromine	x	x	turns brown
iodine	x	x	x