

Chemical reactions and bonding

atoms attract bond compounds electrons elements full gain ions lose metals molecules negative non-metals one
positive shared seven shell six strong transferred two +1 -2

When e..... react, their atoms join with other atoms to form c..... This involves losing, gaining or sharing e..... to form i..... or m..... so that a..... can gain a f..... outer shell of electrons

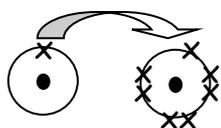
Ionic bonds:

- Formed from m..... and n.....
- metals l..... electrons to form p..... ions
- non-metals g..... electrons to form n..... ions
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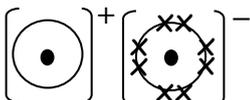
Complete the labels on the diagrams to show formation of sodium chloride (only outer shell electrons are shown):



Sodium has o..... e..... in its outer s..... Chlorine has s..... e..... in its outer s.....



To gain a f..... outer s..... sodium l..... one electron and Chlorine g..... one e..... : the electron is t.....

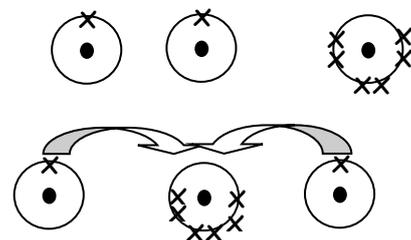


Sodium has formed a p..... charged ion and chlorine has formed a n..... charged ion. The opposite charges a..... to form a very s..... ionic b.....

Sodium has o..... e..... in its outer s..... Oxygen has s..... e..... in its outer s..... There needs to be t..... Sodium atoms so that the both get a f..... outer s.....

To gain a f..... outer shell e..... sodium atom l..... one electron and oxygen gains t..... electrons : the electrons are t.....

Sodium has formed a charged ion and oxygen has formed a charged ion. The opposite charges a..... to form a very s..... ionic b.....



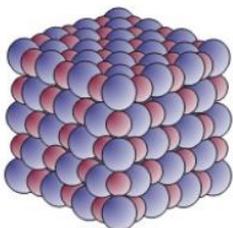
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High	Current Lattice	Dissolved Liquid Oppositely	Electrostatic Millions Positive	Energy Molten Solid	Free Move Strong	Giant Non-metal
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Properties of Ionic compounds:

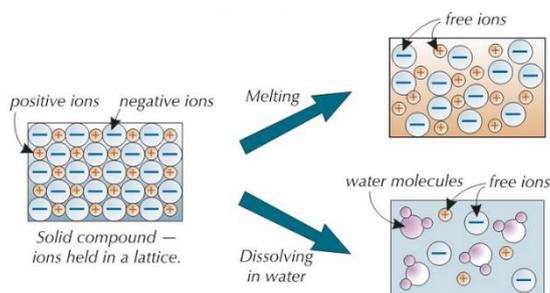
- Ionic compounds are made from m..... of o..... charged ions
- The p..... metal ions are all surrounded by negative n.....-..... ions
- There are strong e..... forces of attraction between the o..... charged ions
- The shape is called a g..... ionic l.....

Use the diagrams to help you describe the properties of ionic compounds.



Melting and Boiling points

Ionic compounds have melting and boiling points. The o..... charged ions have s..... electrostatic forces of attraction between them. This means they take a lot of e..... to break apart.



Conducting electricity

Ionic compounds can only conduct electricity when they are a l.....
When they are a s..... the ions cannot m.....
If they are m..... or d..... in water the ions are f..... to move and carry the electrical c.....