

COMPARING IONIC AND MOLECULAR COMPOUNDS

SNC2D_06 - 07

Ionic compounds	Molecular compounds
<ul style="list-style-type: none"> takes place between metals and non-metals 	<ul style="list-style-type: none"> takes place between non-metals and non-metals
<ul style="list-style-type: none"> form ionic bonds as a result of electron transfer from the metal to the non-metal 	<ul style="list-style-type: none"> form covalent bonds as a result of sharing of electron pairs
<ul style="list-style-type: none"> ionic bond is a result of the forces of attraction between positive, (cations) and negative ions (anions). 3-D lattice structure is formed, attractive forces are maximized and repulsive forces are minimized. 	<ul style="list-style-type: none"> Electrons are shared to form a stable octet. Covalent bonds within the molecule are very strong, (i.e. intramolecular forces), however weak attractive forces between the molecules, (i.e. intermolecular), hold the molecules together.
<ul style="list-style-type: none"> strong attraction throughout the structure (crystalline lattice structure) 	<ul style="list-style-type: none"> covalent bonding between the atoms, () is strong but attraction between the molecules, () is weak
<ul style="list-style-type: none"> high melting points due to *strong ionic bonds* that spread throughout the 3-D structure 	<ul style="list-style-type: none"> usually low melting point, due to weak forces of attraction between the molecules, ()
<ul style="list-style-type: none"> high boiling points * strong ionic bonds* <p>Due to:</p>	<ul style="list-style-type: none"> usually low boiling points. Due to:
<ul style="list-style-type: none"> hard but brittle * strong forces of attraction* <p>Brittle due to:</p>	<ul style="list-style-type: none"> soft; because:
<ul style="list-style-type: none"> good conductors of electricity in the liquid state or in solution, (but not in the solid state) <p>Why?</p>	<ul style="list-style-type: none"> poor conductors of electricity even when in a liquid state
<ul style="list-style-type: none"> solid at room temperature. <p>Why?</p>	<ul style="list-style-type: none"> usually coloured soft waxy solids, liquids or gases at room temperature
<ul style="list-style-type: none"> soluble in water <p>Why?</p>	<ul style="list-style-type: none"> usually insoluble