

Solutions

2.1 Intermolecular forces.

2.2 In the molten state the ions are free to move, so charge can flow; in the solid the ions are held fixed in the lattice.

2.3 (s) for solid; (aq) for aqueous solution.

3.1 Both are small molecules with weak intermolecular forces between them; hexane is a bigger molecule than propane; so the intermolecular forces between hexane molecules are stronger; more energy is needed to separate them, giving the higher boiling point of a liquid at room temperature.

3.2 Silicon dioxide is a giant covalent structure; every atom is joined to others by strong covalent bonds; a very large amount of energy is needed to break the many bonds, so the melting point is very high; there are no free electrons or ions to carry charge.

3.3 The covalent bonds inside each I_2 molecule do not break when it boils; only the weak intermolecular forces between molecules are overcome; the molecules separate into a gas while each molecule stays intact.