

OCR (B) Chemistry A-Level

EL3 - Bonding and Structure

Flashcards

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What is covalent bonding?



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In a covalent bond, a pair of electrons is shared between two atoms. Covalent bonds are strong as there is a strong electrostatic attraction between these shared electrons and the nuclei of the bonded atoms.



Why do giant covalent lattices have a much greater melting point than simple covalent molecules?



Why do giant covalent lattices have a much greater melting point than simple covalent molecules

The covalent bonds between the atoms in a giant covalent lattice are much stronger than the London forces between the simple covalent molecules.



Why are ionic substances only conductive when dissolved?



Why are ionic substances only conductive when dissolved?

When ions are in a solid, they are unable to move so they cannot carry charge. Dissolving the solid causes the ions to be mobile, so they are free to carry charge.



Why do covalent and ionic lattices have high melting points?



Why do covalent and ionic lattices have high melting points?

Both lattices contain atoms that have multiple strong bonds around them, these bonds take a lot of (heat) energy to break.



What are the non-linear bond angle and conditions?



What are the non-linear bond angle and conditions?

104.5°

Two bonded pairs and two lone pairs.



What are the trigonal planar bond angle and conditions?



What are the trigonal planar bond angle and conditions?

120°

Three bonded pairs.



What are the trigonal pyramidal bond angle and conditions?



What are the trigonal pyramidal bond angle and conditions?

107°

Three bonded pairs and one lone pair.



What are the tetrahedral bond angle and conditions?



What are the tetrahedral bond angle and conditions?

109.5°

Four bonded pairs.



What are the octahedral bond angle and conditions?



What are the octahedral bond angle and conditions?

90°

Six bonded pairs.



How do different numbers of bonded and lone pairs produce different shapes in molecules?



How do different numbers of bonded and lone pairs produce different shapes in molecules?

Lone pairs repel more than bonded pairs.



How does bonding occur in an ionic lattice?



How does bonding occur in an ionic lattice?

The attraction between ions of different charges and the repulsion between ions of the same charge causes overall attraction in the lattice.

