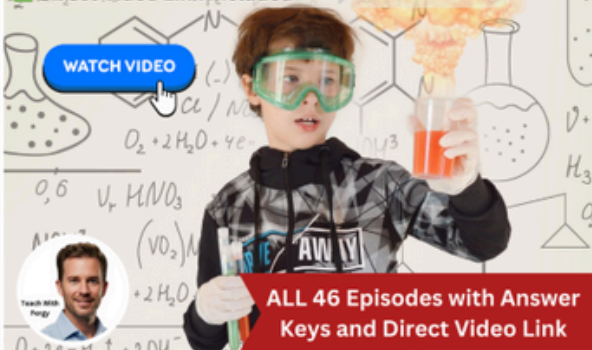


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Crash Course Chemistry #34: Network Solids and Carbon

Name: _____ Date: _____

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1. Diamond and graphite are both made entirely of _____ atoms.
2. The key difference between graphite and diamond lies in the _____ of their atoms.
3. A _____ solid is formed when atoms are linked together in a continuous bonding structure.
4. In graphite, carbon atoms are bonded in _____ sheets.
5. The sheets of graphite are held together by weak _____ forces.
6. In diamond, carbon atoms form a _____ three-dimensional network.
7. Graphite can conduct _____ because its electrons are free to move between atoms.
8. Diamond is a poor conductor of electricity because it only forms _____ bonds.
9. The ability of graphite to act as a lubricant comes from its _____ sheet structure.
10. In graphite, carbon atoms have _____ hybridization.
11. In diamond, carbon atoms have _____ hybridization.
12. The rigid structure of diamonds makes them hard, but also quite _____.
13. The planes along which crystals like diamonds break are known as _____ planes.
14. Heat travels easily through both graphite and diamond due to strong _____ bonds.
15. To convert graphite into diamond, you need extremely high _____ and _____.

Crash Course Chemistry #34: Network Solids and Carbon KEY

1. Diamond and graphite are both made entirely of **carbon** atoms.
2. The key difference between graphite and diamond lies in the **arrangement** of their atoms.
3. A **network** solid is formed when atoms are linked together in a continuous bonding structure.
4. In graphite, carbon atoms are bonded in **hexagonal** sheets.
5. The sheets of graphite are held together by weak **van der Waals** forces.
6. In diamond, carbon atoms form a **uniform** three-dimensional network.
7. Graphite can conduct **electricity** because its **electrons** are free to move between atoms.
8. Diamond is a poor conductor of electricity because it only forms **sigma** bonds.
9. The **ability** of graphite to act as a lubricant comes from its **slipping** sheet structure.
10. In graphite, carbon atoms have **SP²** hybridization.
11. In diamond, carbon atoms have **SP³** hybridization.
12. The rigid structure of diamonds makes them hard, but also quite **brittle**.
13. The planes along which crystals like diamonds break are known as **cleavage** planes.
14. Heat travels easily through both graphite and diamond due to strong **covalent** bonds.
15. To convert graphite into diamond, you need extremely high **temperature** and **pressure**.

15 Questions

Answer Key Included

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