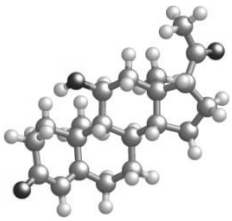

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The Structures and Properties of Materials

Ionic Compounds

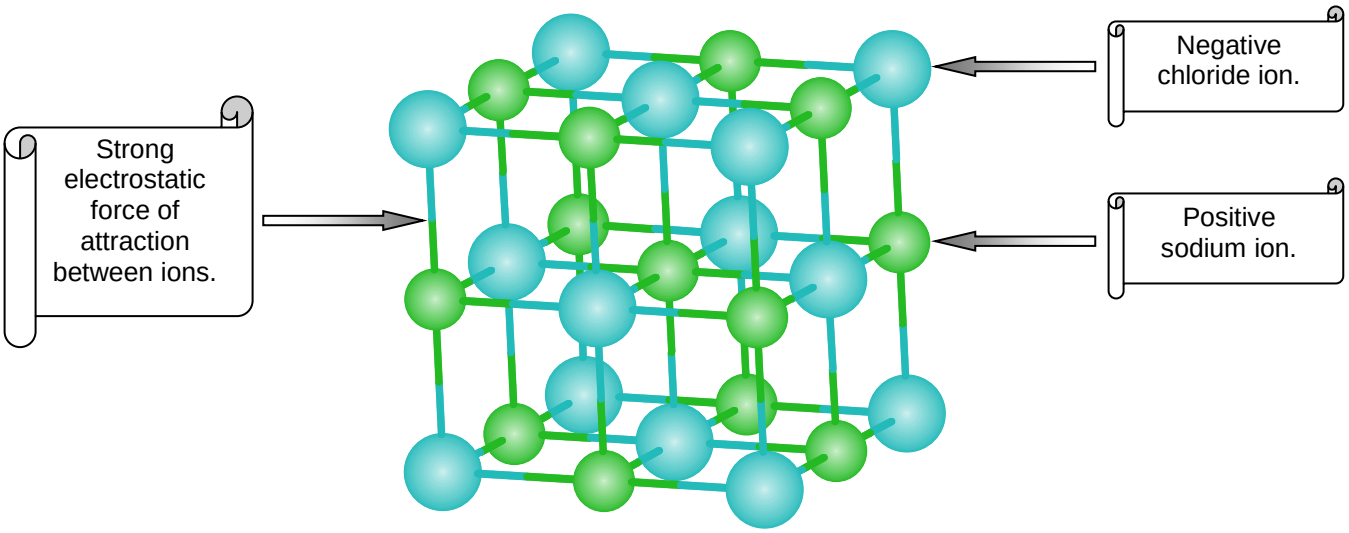


Diagram 1: The lattice structure of sodium chloride.

1. What type of bonding is present in sodium chloride?

……..

2. What best describes the structure of sodium chloride?

……..

3. What are the properties of sodium chloride?

- Property: ……..

→ Explanation: ……..

- Property: ……..

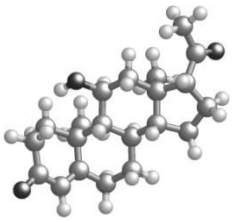
→ Explanation: ……..

- Property: ……..

→ Explanation: ……..

- Property: ……..

→ Explanation: ……..



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Structures and Properties of Materials

Simple Covalent Elements and Compounds

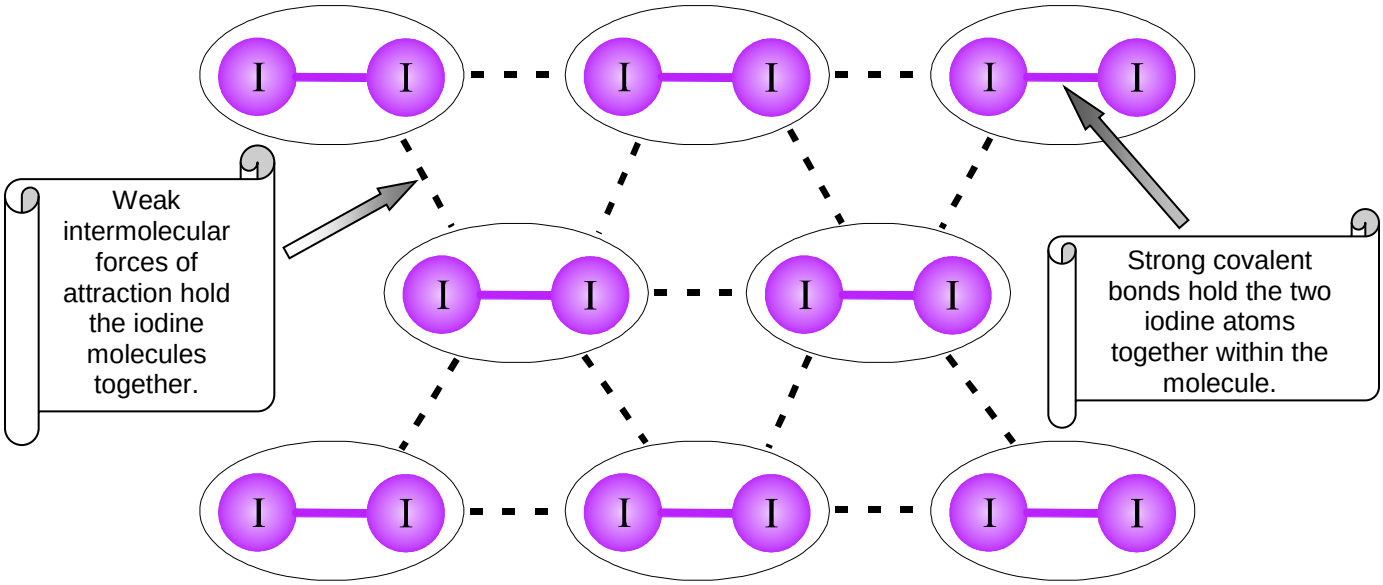


Diagram 1: This shows the bonding in a sample of solid iodine.

1. What type of bonding is present in iodine?

……..

2. What best describes the structure of iodine?

……..

3. What are the properties of iodine?

- Property: ……..

→ Explanation: ……..

- Property: ……..

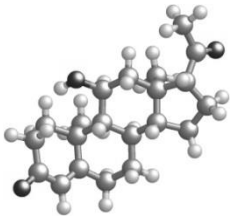
→ Explanation: ……..

- Property: ……..

→ Explanation: ……..

- Property: ……..

→ Explanation: ……..



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Structures and Properties of Materials

Diamond

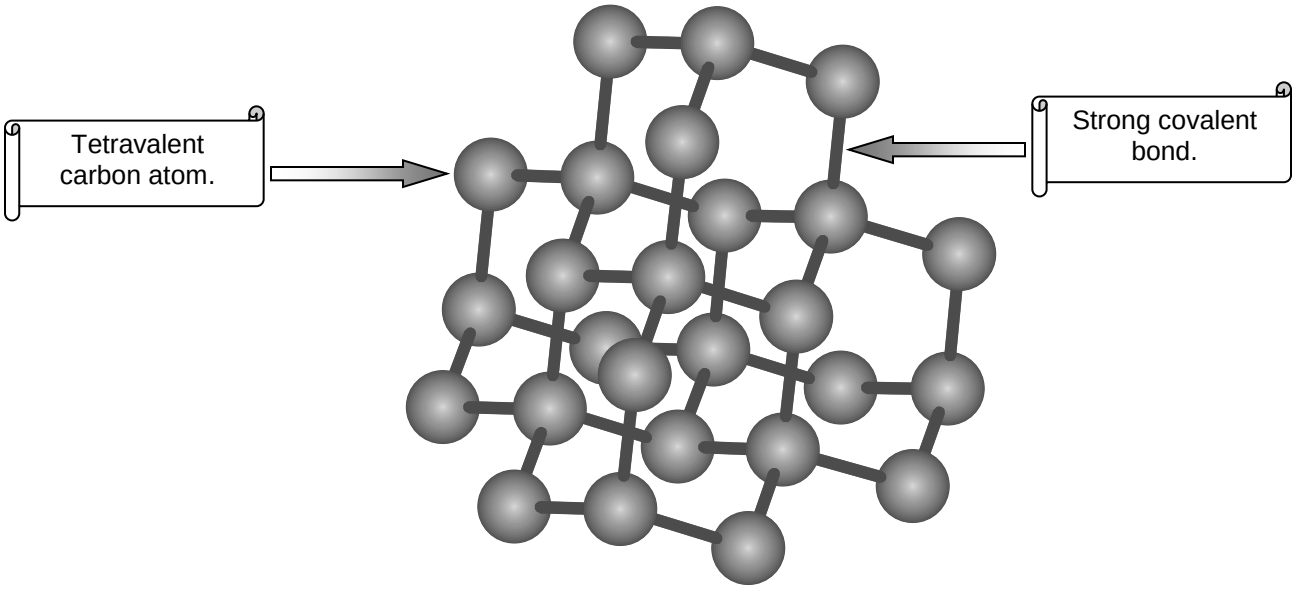


Diagram 1: This shows the structure of diamond, an *allotrope* of carbon.

1. What type of bonding is present in diamond?

……..

2. What best describes the structure of diamond?

……..

3. What are the properties of diamond?

- Property: ……..

→ Explanation: ……..

- Property: ……..

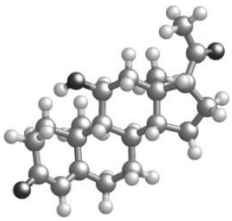
→ Explanation: ……..

- Property: ……..

→ Explanation: ……..

- Property: ……..

→ Explanation: ……..



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Structures and Properties of Materials

Graphite

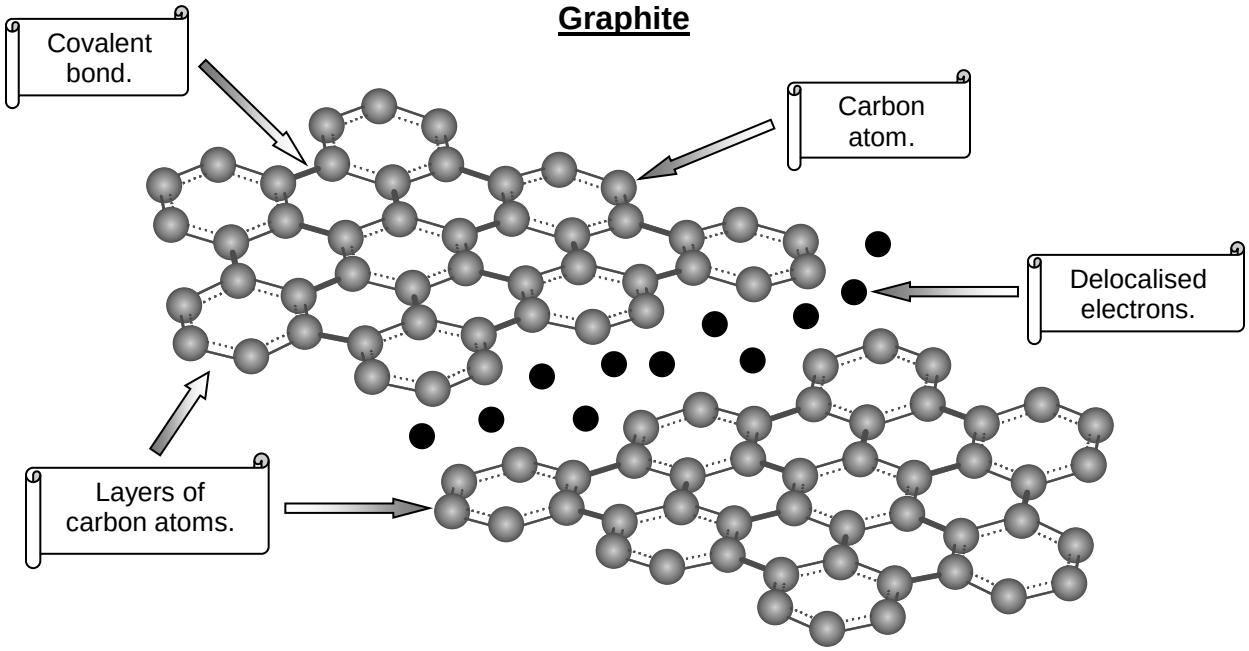


Diagram 1: This shows the structure of graphite, an *allotrope* of carbon.

1. What type of bonding is present in graphite?

……..

2. What best describes the structure of graphite?

……..

3. What are the properties of graphite?

- Property: ……..

→ Explanation: ……..

- Property: ……..

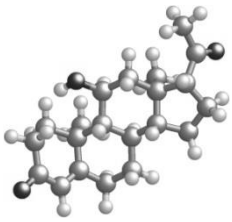
→ Explanation: ……..

- Property: ……..

→ Explanation: ……..

- Property: ……..

→ Explanation: ……..



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Structures and Properties of Materials

Metals

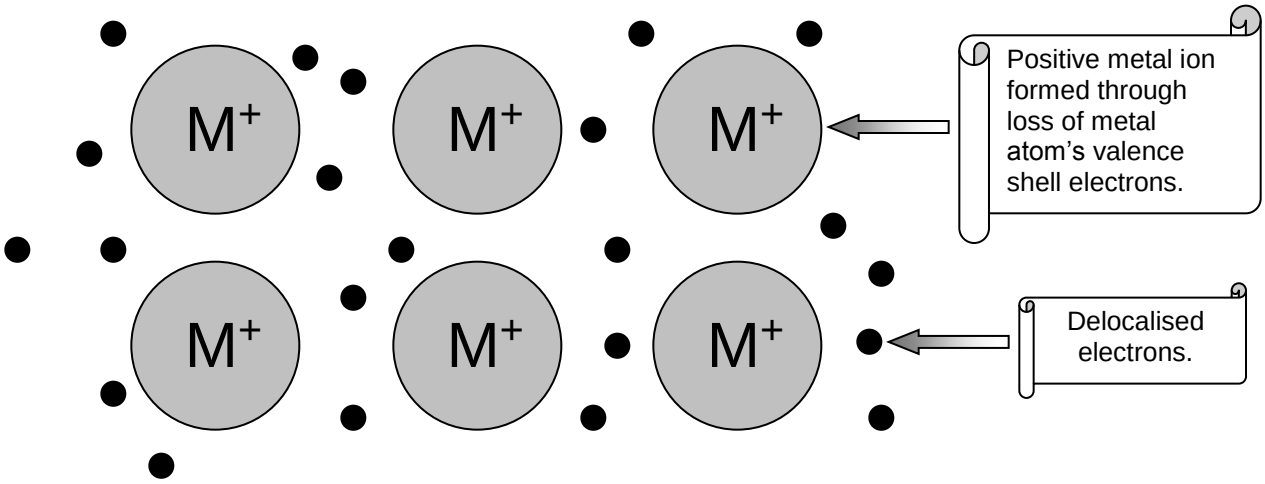


Diagram 1: This shows the lattice structure of a metal.

1. What type of bonding is present in a metal?

……..

2. What best describes the structure of a metal?

……..

3. What are the properties of a metal?

- Property: ……..

→ Explanation: ……..

- Property: ……..

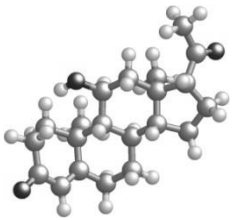
→ Explanation: ……..

- Property: ……..

→ Explanation: ……..

- Property: ……..

→ Explanation: ……..



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Structures and Properties of Materials

Polymers

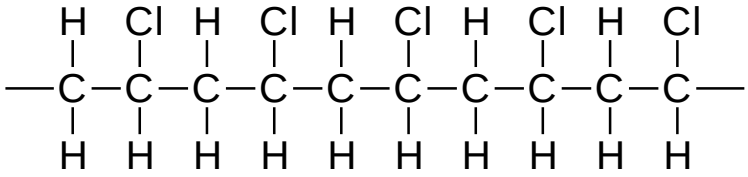

Diagram 1: This shows the structural formula of the polymer poly(chloroethene). The common name of this polymer is polyvinylchloride, or PVC for short.

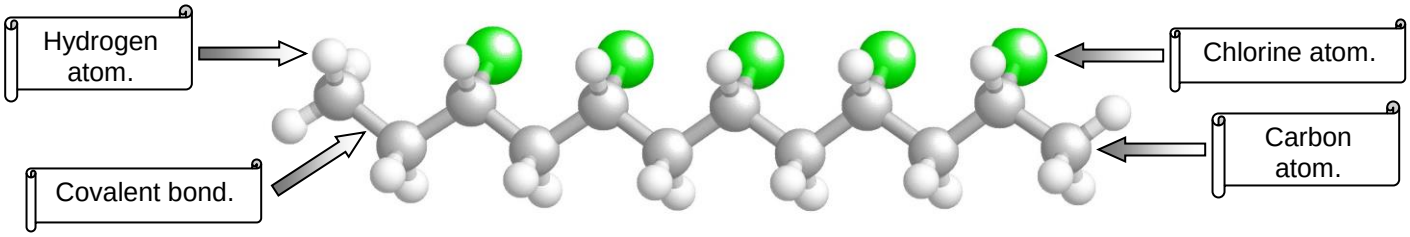

Diagram 2: This shows the "ball and stick" structure of the polymer poly(chloroethene).

1. What type of bonding is present in a polymer?

……..

2. What best describes the structure of a polymer?

……..

3. What are the properties of a polymer?

- Property: ……..

→ Explanation: ……..

- Property: ……..

→ Explanation: ……..

- Property: ……..

→ Explanation: ……..

- Property: ……..

→ Explanation: ……..