

Name: _____

Date: _____

Unit 8 - Topic 5

Intermolecular Forces (IMFs)

Determine the type of intermolecular force that would hold the molecules of these substances together. You'll need to determine if the compound is ionic or molecular (covalent), then draw the molecule to determine if its shape makes it polar or non-polar. Lastly, **decide if the IMFs are VanDerWaals, Dipole-Dipole, Hydrogen 'bonds', or Ionic bonds.**

1. CO₂ _____

2. NH₃ _____

3. N₂ _____

4. PCl₃ _____

5. CaCl₂ _____

1. Based on Reference Table H, which sample has the highest vapor pressure?

1. water at 20°C
2. water at 80°C
3. ethanol at 50°C
4. ethanol at 65°C

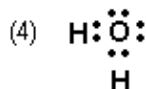
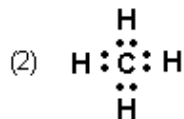
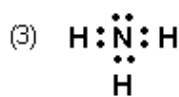
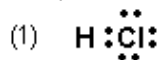
2. Compared to the boiling point of H₂S, the boiling point of H₂O is relatively high. Which type of intermolecular force causes this difference?

1. dipole-dipole
2. hydrogen
3. VanDerWaal's
4. covalent

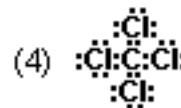
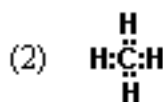
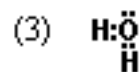
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3. Which electron dot structure represents a non-polar molecule?

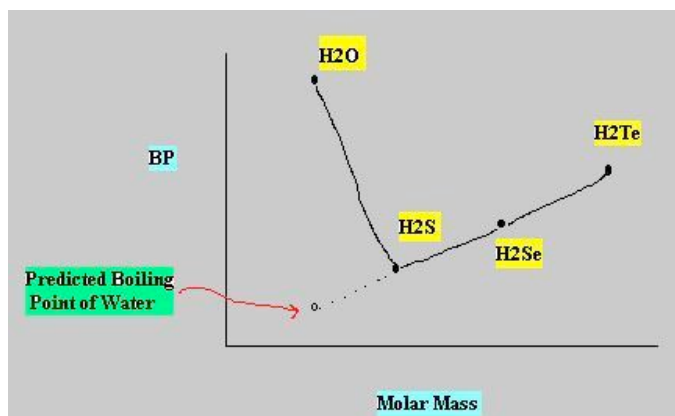


4. Which electron dot formula represents a polar molecule?



Hydrogen Bonds

Refer to the graph to the right, which shows the boiling points of hydrogen-Group 16 compounds.



1. What do you notice about the *predicted* boiling point of water as compared to its *actual* boiling point?

2. Draw the Lewis structures for H_2O , H_2S , H_2Se , and H_2Te below:

3. What do all the Lewis Structures have in common? _____

4. Label the **polar covalent bonds** and the **hydrogen 'bonds'** in the diagram below.

