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Crash Course - CHEMISTRY

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Crash Course Chemistry #23: Polar and Non-Polar Molecules

Name: _____ Date: _____

You can access the video here → <https://youtu.be/PVL24HAcsnc?list=PTEWp-Brc3k9zCM0>

- One of the most important classifications of molecules is whether a molecule is _____ or non-polar.
- A polar molecule must have an asymmetrical distribution of _____ around the molecule.
- _____ is a measure of how much electrons are attracted to an atom.
- Electronegativity _____ from left to right across a period on the periodic table.
- For a molecule to be polar, the difference in electronegativities must be at least _____.
- A molecule must have both charge asymmetry and _____ asymmetry to be polar.
- A _____ moment refers to the separation of charge within a molecule.
- The notation δ^+ and δ^- indicate _____ charges on atoms within a polar molecule.
- The strength of surface tension depends on _____ forces that pull molecules together.
- In polar substances, the arrangement of molecules is such that _____ charges align.
- _____ bonds occur between the partially positive hydrogen and a more electronegative atom.
- The highest density of water occurs at _____ °C.
- Water's high _____ means it takes a lot of energy to change its temperature.
- Molecules that contain both polar and non-polar regions, like soap, are known as _____ molecules.
- The tails of fatty acids are _____, which prevents cells from dissolving in water.

Crash Course Chemistry #23: Polar and Non-Polar Molecules KEY

- One of the most important classifications of molecules is whether a molecule is **polar** or non-polar.
- A polar molecule must have an asymmetrical distribution of **electrons** around the molecule.
- Electronegativity** is a measure of how much electrons are attracted to an atom.
- Electronegativity **increases** from left to right across a period on the periodic table.
- For a molecule to be polar, the difference in electronegativities must be at least **0.5**.
- A molecule must have both charge asymmetry and **geometric** asymmetry to be polar.
- A **dipole** moment refers to the separation of charge within a molecule.
- The notation δ^+ and δ^- indicate **partial** charges on atoms within a polar molecule.
- The strength of surface tension depends on **intermolecular** forces that pull molecules together.
- In polar substances, the arrangement of molecules is such that **opposite** charges align.
- Hydrogen** bonds occur between the partially positive hydrogen and a more electronegative atom.
- The highest density of water occurs at **4** °C.
- Water's high **specific heat** means it takes a lot of energy to change its temperature.
- Molecules that contain both polar and non-polar regions, like soap, are known as **hybrid** molecules.
- The tails of fatty acids are **non-polar**, which prevents cells from dissolving in water.

15 Questions

Answer Key Included

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