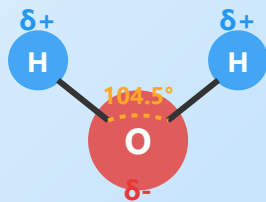


💧 Water - The Solvent of Life

H₂O Molecular Structure



🌡️ Unique Properties

- High heat capacity
- High heat of vaporization
- Less dense as solid (ice floats)
- Excellent solvent for polar molecules

🔬 Hydrophobic Effect

- Nonpolar molecules cluster together
- Drives protein folding
- Forms lipid bilayers
- Entropy-driven process

🔬 Molecular Structure

- Bent geometry (104.5°)
- Polar covalent O-H bonds
- Partial charges: δ^- O, δ^+ H
- Strong dipole moment

🌊 Solvation

- Water molecules surround ions
- Hydration shells stabilize charges
- Affects biochemical reactions
- Critical for ion transport

🔬 H-Bond Network

