

# OCR (B) Chemistry A-Level

## OZ1 - Bonding and Structure

### Flashcards

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# What is electronegativity?



# What is electronegativity?

Electronegativity is the measure of an atom's ability to attract the shared electrons to itself in a covalent bond.

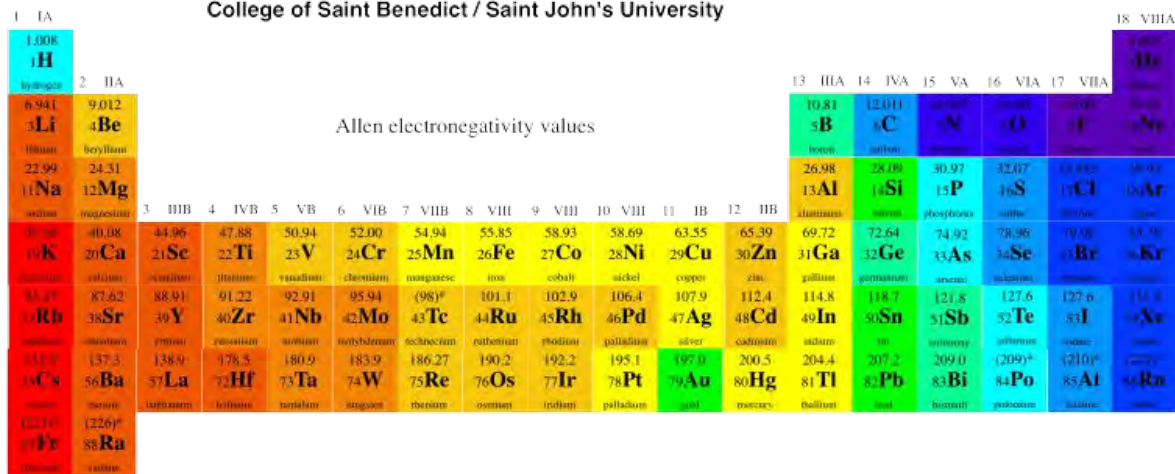


What is the trend in electronegativity  
across the periodic table?

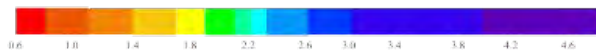


# What is the trend in electronegativity across the periodic table?

Periodic Table of Electronegativity  
 College of Saint Benedict / Saint John's University



scale:



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How do instantaneous dipole-induced dipole bonds arise?



# How do instantaneous dipole-induced dipole bonds arise?

- There is an uneven distribution of electrons in the molecule.
- This creates temporary dipoles in the molecule.
- These temporary dipoles induce dipoles in neighbouring molecules.



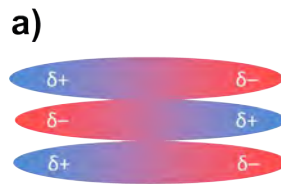
# How do permanent dipole-dipole bonds arise?





# How do permanent dipole-dipole bonds arise?

There is a large difference in electronegativities of atoms across the molecule which creates permanent dipoles. The oppositely charged parts of the molecules attract each other.

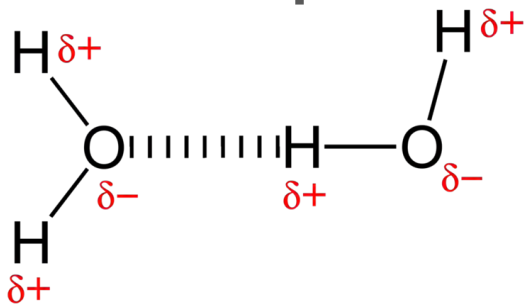


# What are hydrogen bonds?



# What are hydrogen bonds?

Hydrogen bonds are the electrostatic attraction between electron deficient hydrogens and a lone pair of electrons.



What is the relationship between the strength of intermolecular bonds and the boiling point of a substance?



What is the relationship between the strength of intermolecular bonds and the boiling point of a substance?

As the strength of the intermolecular bonds increase, they take more (heat) energy to break, so the boiling point of the substance is higher.



How does the boiling point change as the length of the carbon chain increases?



How does the boiling point change as the length of the carbon chain increases?

The boiling point of a hydrocarbon increases as the length of the carbon chain increases as the contact surface area between the molecules increases, increasing the strength of the intermolecular London Forces.



How does the boiling point change as the carbon chain becomes more branched?





How does the boiling point change as the carbon chain becomes more branched?

As the carbon chain becomes more branched, the area of contact between the molecules decreases, thus decreasing the strength of the intermolecular London Forces.



Why do the boiling points of halogens increase as we move down the group?



Why do the boiling points of halogens increase as we move down the group?

As we move down group 7 the halogen molecules have more electrons, so the intermolecular London Forces become stronger, thus taking more energy to break.

