• They operate over very short distances
• **Permanent dipole interactions**
  - Permanent dipole interactions occur with opposite partial charges on polar molecules
  - The most electronegative atom has a partial negative charge whereas the least electronegative atom carries a slight positive charge
• **Steric repulsion**
  - **Steric repulsion is different from dispersion forces and dipole interactions.** Steric repulsion, as the name suggests, is the repulsion of 2 molecules due to the surface electrons
  - The repulsion operates over very short distances
    - Once the molecules have been repelled far enough, dispersion forces and dipole moments cause the molecules to be attracted again

**Van der Waals interaction** is the term used to describe the overall interaction between to molecular species, taking into account the dispersion forces, dipole interactions and even steric repulsions
• Only molecules that are non-covalently bonded are taken into account here
• This sum aims to show the optimum distance for attraction between the 2 molecules
• The right image shows an example of the optimum distance between two molecules